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POCKET  
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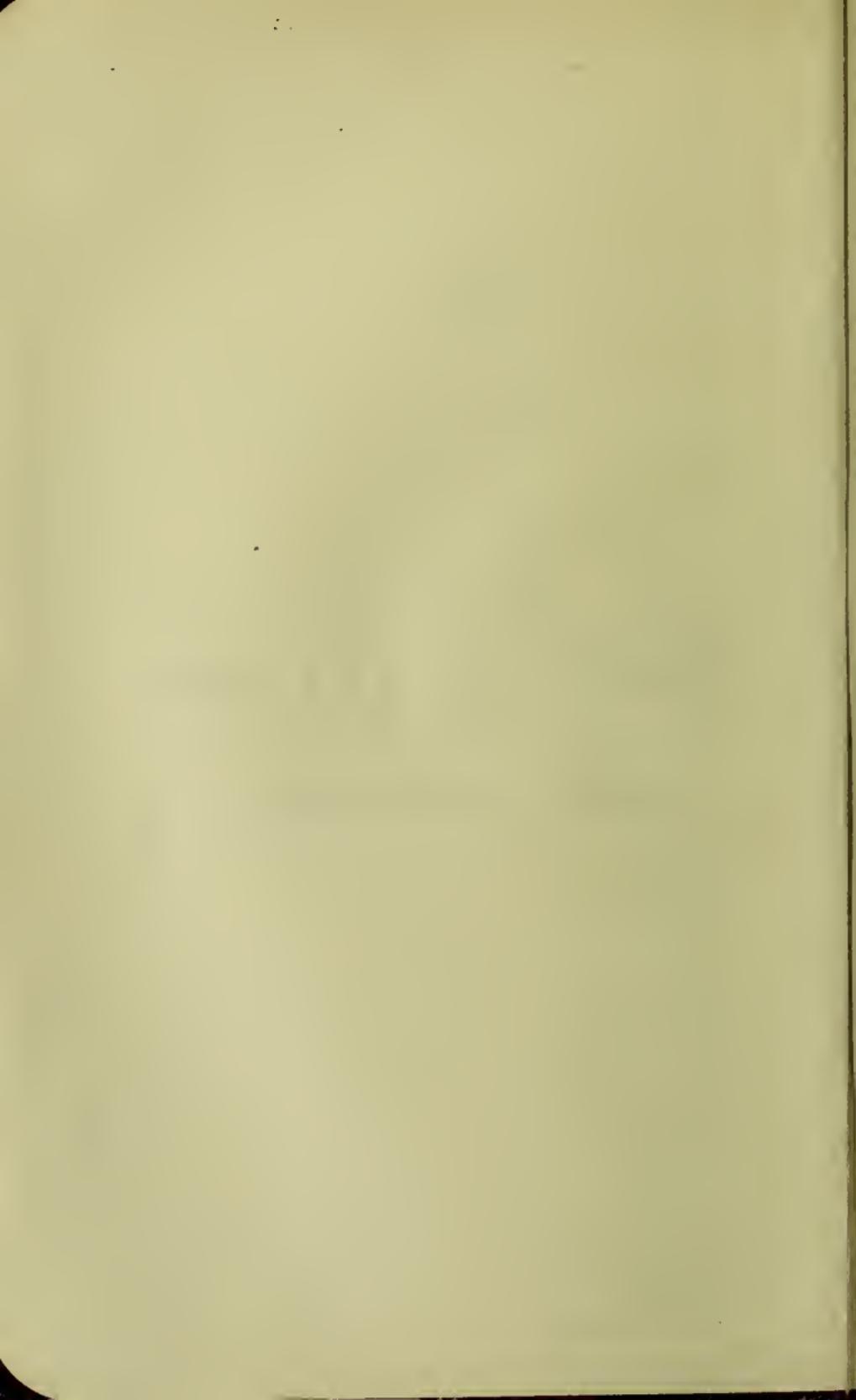
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SQUIRE'S  
POCKET COMPANION  
TO THE  
BRITISH PHARMACOPŒIA



THE  
POCKET COMPANION  
TO THE  
BRITISH PHARMACOPÆIA

COMPARING THE STRENGTH OF ITS VARIOUS PREPARATIONS  
WITH THOSE OF THE  
UNITED STATES AND OTHER FOREIGN PHARMACOPÆIAS  
TO WHICH ARE ADDED  
NOT OFFICIAL PREPARATIONS

AND  
PRACTICAL HINTS ON PRESCRIBING



PETER WYATT SQUIRE

LONDON  
J. & A. CHURCHILL  
7 GREAT MARLBOROUGH STREET

1904

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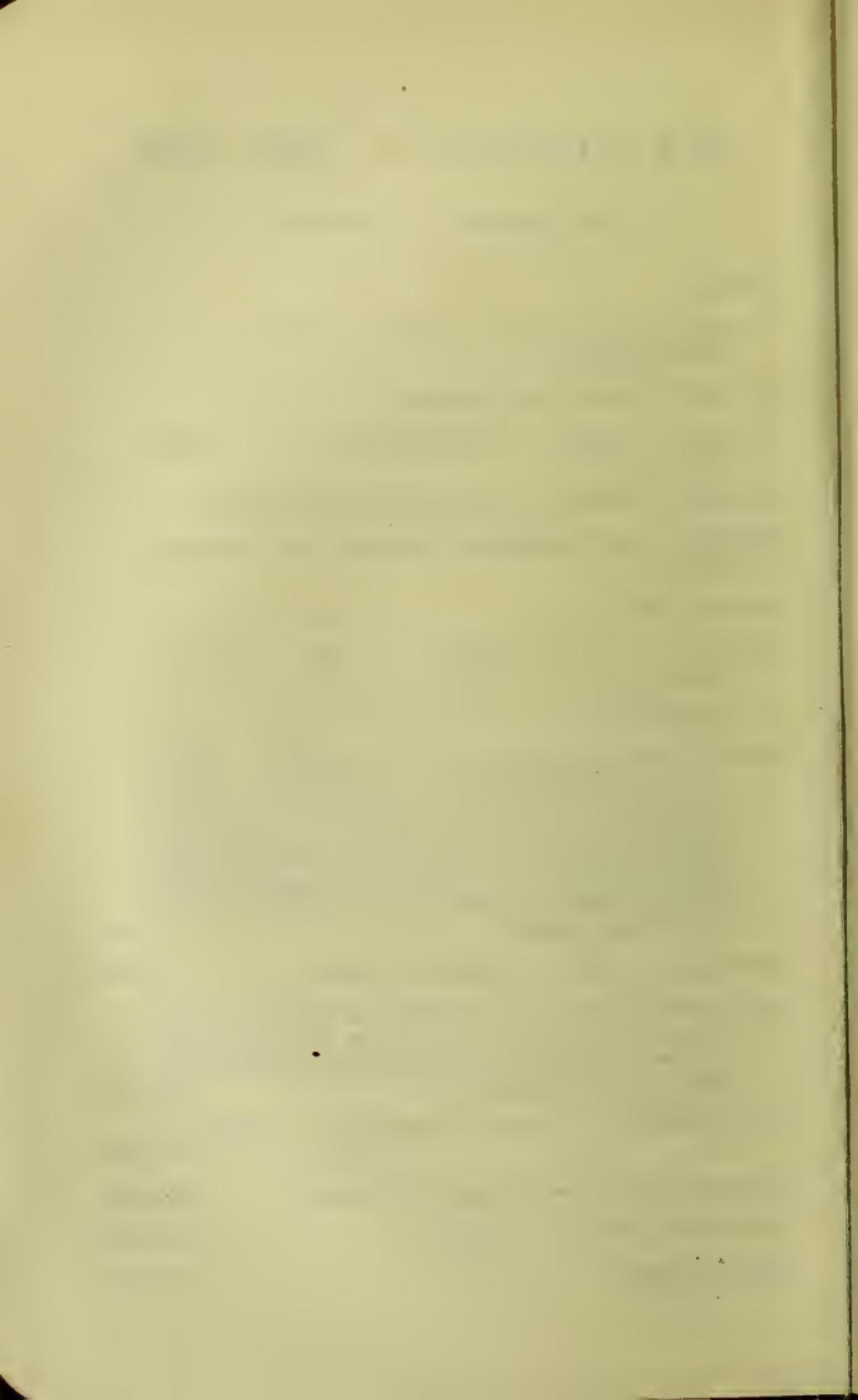
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## P R E F A C E.

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OVER two years ago, when a new edition of the *Companion* was contemplated, it was recognised that, to keep pace with the trend of modern research, considerable further additions would require to be made to that book which would perceptibly increase its size, and it is already rather large for a handy manual. The alternative was to publish two books—(1) a smaller volume containing information on such matters as are commonly arising in the ordinary course of prescribing and dispensing, such for instance as the physical characters of salts, and the solubility and doses of drugs and chemicals, more particularly those of recent introduction, also the best method of dispensing them ; (2) an enlarged volume, giving the information contained in the smaller book, and also notes on improved pharmaceutical processes, and criticisms on the Official tests, both of which involve a considerable amount of experimental work, and the description of which occupies a good deal of space.

It was known that a large number of persons who bought the *Companion* were but little interested in these latter portions, and it was therefore decided to put in hand the smaller book, devoting the whole attention to matters which were of special interest to the practitioner and dispenser.

The book is arranged like the older *Companion* on strictly alphabetical lines, so that most substances can be readily referred to in their proper places, without previous reference to the index; this saves time, and it is supplemented by a list of the Official and Not Official preparations given under each substance immediately following the dose, so that a prescriber can see at a glance the various forms in which any medicament can be given.

The paragraphs of the *Companion*—‘ Solubility,’ ‘ Medicinal Properties,’ and ‘ Doses’—are included and amended, and ‘ Prescribing Notes’ has been considerably enlarged. Several formulas have been included from Continental Pharmacopeias, and from the Pharmacopeias of the London Hospitals, when these specially indicated good methods of exhibiting the drug.

The Official preparations are given as shortly as possible, compatible with conveying a correct idea of their ingredients and the proportions of them.

The Not Official salts and preparations have been greatly increased, so as to embrace all those recently introduced into medicine.

The British Pharmacopœia and most of the recent editions

of the Continental Pharmacopœias append doses to the substances described therein; Ger. 1900, Dutch Supp. 1902, Ital. 1902, Russ. 1902, Swiss 1893.

When the British dose in grains is translated into its equivalent in grammes, one would expect the result to agree fairly closely with the doses given in the Foreign Pharmacopœias, but this is not always the case. For the purpose of comparison, the *Pocket Companion* gives, under potent drugs, the *B.P.* dose and its equivalent in the metric system, together with the dose taken from one of the Foreign Pharmacopœias, and in cases where these works do not give a dose or the substance is not mentioned, then the dose is taken from *Hager's Pharmaceutischen Praxis*, 1900-1902.

New editions or supplements to the following Foreign Pharmacopœias have been issued since 1899: Austrian, Dutch, German, Italian, Russian and Swedish; new editions also of the following Hospital Pharmacopœias have appeared: Central Throat and Ear, City of London (Chest), King's College, London, Royal London Ophthalmic, St. Bartholomew's, St. John's (Skin), St. Thomas's, Throat (Golden Square), University College, Victoria (for Children), and Westminster.

A chapter on Therapeutic Agents of Microbial Origin has been specially written for the book by Dr. Tanner Hewlett, and gives the Practitioner a clear idea of the present position of this department of medicine. A chapter on Mineral Waters is also included, with the quantities of the principal ingredients of each spring; the book also includes a Therapeutical Index brought up to date, and an abridged General Index. As the book is alphabetically arranged, it was considered that a Posological Index, on the lines of the larger *Companion*, would occupy more space than its general utility demanded; it was therefore not adopted.

The Author wishes to acknowledge his indebtedness to Dr. Taylor Grant for carefully reading the paragraphs relating to Medicinal Properties, and for numerous suggestions. He also thanks the various members of his staff who have assisted in the preparation of the book, more particularly Mr. Charles M. Caines, who has been of great assistance in making abstracts from Journals and in reading the proof-sheets.

P. W. SQUIRE.

413 OXFORD STREET,

June 1904.

THE WEIGHTS AND MEASURES  
OF THE BRITISH PHARMACOPÆIA,

At the temperature of 60° Fahrenheit.

WEIGHTS.

The Avoirdupois pound = 16 oz. = 7000 grains.  
1 oz. = 437·5 grains.  
1 gr. = 1 grain.

In addition to the use of the Imperial weights, it is permitted in the Act of 1878 that drugs when sold by retail may be sold by apothecaries' weight. The use in trade of a weight or measure of the metric system was made lawful by the Weights and Measures (Metric System) Act, 1897.

The Preface to the British Pharmacopœia states : 'It is strongly urged upon all medical men to avoid the use of the terms ounce and pound with reference to any other than the avoirdupois or Imperial Standard weight ; but it is still optional with the physician *in prescribing* to use the symbols  $\Theta$  (scruple) and  $\mathcal{Z}$  (drachm), the former representing 20 and the latter 60 grains. . . . In the measurement of liquids the Imperial measure is used for higher denominations, and the fluid ounce and its subdivisions into fluid drachms and minims for the lower denominations of volume.'

MEASURES.

The Imperial gallon contains 277·278 cubic inches of distilled water at 60° F.

C 1 gallon	= 8 pints,	weighing 10 pounds, contains 76,800 minims.
O 1 pint	= 20 fluid ounces	, 1 $\frac{1}{4}$ " " 9,600 "
fl.oz. 1 fluid ounce	= 8 fluid drachms	, 437·5 grains " 480 "
fl. drm. 1 fluid drachm	= 60 minims	, 54·68 " 60 "
M 1 minim	"	0·91 grain " 1 minim.

It must be remembered that the minim is less than the grain measure ; 109·7143 minims (taken as 110 minims throughout B.P. '98) = the volume of 100 grains of Water at 60° F. (15·5° C.).

The British Pharmacopœia still gives the formulas in weights and measures, both by the Imperial and the metric systems. Liquids are as a rule ordered by measure, but there is no uniformity in this : for instance, in Linimentum Terebinthinae Aceticum the Glacial Acetic Acid is weighed, but in Acetum Cantharidis it is measured ; in Oxymel the clarified Honey is weighed, but in Oxymel Scillæ it is measured. Glycerin and other fluids, in some preparations are weighed, in others they are measured.

The Continental Pharmacopœias give the formulas in parts by weight : in some instances the gramme is indicated as the unit. The formulas in the United States Pharmacopœia are given in grammes and cubic centimetres.

Graduated measures may be checked with good weights and scales, and distilled water. Every fluid ounce of distilled water at 60° F. (15·5° C.) weighs an ounce avoirdupois, but there are two lines on the surface of a liquid ; the upper one is that of capillary attraction to the sides of the vessel ; the lower one the exact surface of the fluid. This should be on a line with the eye to measure accurately.

To find the capacity in gallons of any rectangular vessel, multiply the length in inches by the breadth, and the product by the depth in inches, then divide the total by 277·278, which is the number of cubic inches contained in the gallon.

To find the capacity in gallons of a cylindrical vessel, multiply the square of half the diameter in inches by 3·1416 and the resulting figure by the depth in inches ; divide the result by 277·278.

## METRIC MEASURES.

ALSO RELATION OF THE METRIC MEASURES TO THE MEASURES  
OF THE BRITISH PHARMACOPEIA.

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### LENGTH.

1 Millimetre = the thousandth part of a metre, or  $0\cdot001$  metre =  $0\cdot03937$  inch.  
 1 Centimetre = the hundredth part of a metre, or  $0\cdot01$  metre =  $0\cdot39371$  inch.  
 1 Decimetre = the tenth part of a metre, or  $0\cdot1$  metre =  $3\cdot93708$  inches.  
 1 Metre =  $39\cdot37079$  inches, or 1 yard  $3\cdot37$  inches nearly.

1 Line	$= \frac{1}{12}$ inch.	
1 Inch	$= \frac{1}{12}$ foot.	$= 0\cdot02540$ metre, or $25\cdot40$ millimetres.
12 Inches	$= 1$ foot.	$= 0\cdot30480$ metre, or $30\cdot48$ centimetres.
36 ,,	$= 3$ feet = 1 yard	$= 0\cdot914399$ metre.

It is remarkable that the English and French standards, taken from such different sources, should so nearly agree :—

The English, from the length of a pendulum vibrating  $\frac{1}{2}$  seconds of mean time in the latitude of London, in a vacuum at the level of the sea ; from which the yard (36 inches) is computed . . . . . }  $39\cdot1393$  inches.

The French, being the ten-millionth part of a quarter of the earth's meridian, and called a metre . . . . . }  $39\cdot37079$  ,,

---

### CAPACITY.

1 Millilitre	$= 1\cdot00016$ cubic centimetre, or the volume of 1 gr. of water at $4^{\circ}\text{C}.$
1 Centilitre	$= \frac{1}{10}$ litre
1 Decilitre	$= \frac{1}{100}$ litre
1 Litre or 1000 Millilitres	$= 1\cdot0016$ cubic decimetre
	$= 1000$ millilitres
	$= 1$ kilo

1 Cubic Centimetre =  $0\cdot99984$  millilitre.

1 Cubic Decimetre (1000 c.c.) =  $0\cdot99984$  litre.

1 Cubic Centimetre =  $15\cdot43235$  grain-measures, or  $16\cdot9$  minims nearly.

1 Litre =  $1\cdot7598$  pints,  $35\frac{1}{4}$  fl. oz. and 11 minims, or  $15432\cdot348$  grain-measures.

1 Gallon =  $4\cdot5459631$  litres.

1 Pint =  $0\cdot5682454$  litre, or  $568\cdot336$  cubic centimetres nearly.

1 Fluid Ounce =  $0\cdot0284123$  litre, or  $28\cdot417$  cubic centimetres nearly.

1 Fluid Drachm =  $0\cdot003552$  litre, or  $3\cdot552$  cubic centimetres nearly.

1 Minim =  $0\cdot000059$  litre, or  $0\cdot056$  cubic centimetre nearly.

IMPERIAL WEIGHTS AND MEASURES  
WITH THE METRIC EQUIVALENTS.

Minims. C.C.	Minims. C.C.	Grain. Gramme.	Grains. Grammes.
1 = 0·06	23 = 1·36	$\frac{1}{560} = 0\cdot00012$	1 = 0·065
2 = 0·12	24 = 1·42	$\frac{1}{280} = 0\cdot00025$	2 = 0·13
3 = 0·18	25 = 1·5	$\frac{1}{140} = 0\cdot00027$	3 = 0·20
4 = 0·24	26 = 1·54	$\frac{1}{70} = 0\cdot00032$	4 = 0·26
5 = 0·30	27 = 1·60	$\frac{1}{35} = 0\cdot00043$	5 = 0·32
6 = 0·36	28 = 1·66	$\frac{1}{17.5} = 0\cdot00054$	6 = 0·40
7 = 0·42	29 = 1·70	$\frac{1}{10} = 0\cdot00065$	7 = 0·46
8 = 0·50	30 = 1·80	$\frac{1}{5} = 0\cdot0009$	8 = 0·52
9 = 0·54	32 = 1·90	$\frac{1}{3.5} = 0\cdot00101$	9 = 0·60
10 = 0·6	34 = 2·00	$\frac{1}{3} = 0\cdot0011$	10 = 0·65
11 = 0·66	36 = 2·12	$\frac{1}{2.5} = 0\cdot0013$	11 = 0·72
12 = 0·72	38 = 2·24	$\frac{1}{2} = 0\cdot002$	12 = 0·78
13 = 0·78	40 = 2·36	$\frac{1}{1.5} = 0\cdot0027$	13 = 0·84
14 = 0·84	45 = 2·66	$\frac{1}{1.2} = 0\cdot00274$	14 = 0·91
15 = 0·9	60 = 3·6 or 1 fl. drm.	$\frac{1}{1.0} = 0\cdot0040$	15 = 1·00
16 = 0·96	120 = 7·1 or 2 fl. drms.	$\frac{1}{0.83} = 0\cdot0054$	16 = 1·04
17 = 1·0		$\frac{1}{0.67} = 0\cdot0081$	17 = 1·10
18 = 1·06	180 = 10·6 or 3 fl. drms.	$\frac{1}{0.5} = 0\cdot0108$	18 = 1·17
19 = 1·12	240 = 14·2 or 4 fl. drms.	$\frac{1}{0.4} = 0\cdot0162$	19 = 1·24
20 = 1·20		$\frac{1}{0.33} = 0\cdot0216$	20 = 1·30
21 = 1·25	480 = 28·4 or 8 fl. drms	$\frac{1}{0.25} = 0\cdot032$	25 = 1·62
22 = 1·30	or 1 fl. oz.	$\frac{1}{0.2} = 0\cdot05$	30 = 2·00

## EQUIVALENTS OF ENGLISH WEIGHTS TO FRENCH GRAMMES.

1 pound avoirdupois	7000 grains . . . . .	or 16 ounces . . . . .	= 453·5924 French grammes.
6562·5 . . . . .	or 15 . . . . .	= 425·2425	„ „ „
6125 . . . . .	or 14 . . . . .	= 396·8930	„ „ „
5687·5 . . . . .	or 13 . . . . .	= 368·5435	„ „ „
5250 . . . . .	or 12 . . . . .	= 340·1940	„ „ „
4812·5 . . . . .	or 11 . . . . .	= 311·8445	„ „ „
4375 . . . . .	or 10 . . . . .	= 283·495	„ „ „
3937·5 . . . . .	or 9 . . . . .	= 255·1455	„ „ „
3500 . . . . .	or 8 . . . . .	= 226·796	„ „ „
3062·5 . . . . .	or 7 . . . . .	= 198·4465	„ „ „
2625 . . . . .	or 6 . . . . .	= 170·097	„ „ „
2187·5 . . . . .	or 5 . . . . .	= 141·7475	„ „ „
1750 . . . . .	or 4 . . . . .	= 113·398	„ „ „
1312·5 . . . . .	or 3 . . . . .	= 85·0485	„ „ „
875 . . . . .	or 2 . . . . .	= 56·699	„ „ „
1 ounce, 437·5 . . . . .	or 1 . . . . .	= 28·3495	„ „ „
218·75 . . . . .	or $\frac{1}{2}$ . . . . .	= 14·17475	„ „ „
109·37 . . . . .	or $\frac{1}{4}$ . . . . .	= 7·087375	„ „ „
15·4323 . . . . .	. . . . .	= 1	
1·543 . . . . .	. . . . .	= 0·1, a decigramme.	
1 grain, 1 . . . . .	. . . . .	= 0·0648 gramme.	
0·15 or $\frac{3}{20}$ nearly . . . . .	. . . . .	= 0·01, a centigramme.	
0·015 or $\frac{3}{50}$ nearly . . . . .	. . . . .	= 0·001, a milligramme (nearly).	

## MEASURES, EQUIVALENTS OF FRENCH GRAMMES TO ENGLISH WEIGHTS.

1 Litre of Water at 4° C.	= 1 kilogramme, 1000 French grammes = 35 ounces and 120 grains.
900 . . . . .	= 31 . . . . . and 326 $\frac{1}{4}$ „
800 . . . . .	= 28 . . . . . and 96 „
700 . . . . .	= 24 . . . . . and 302 $\frac{1}{4}$ „
600 . . . . .	= 21 . . . . . and 72 „
500 . . . . .	= 17 . . . . . and 278 $\frac{1}{4}$ „
400 . . . . .	= 14 . . . . . and 48 „
300 . . . . .	= 10 . . . . . and 254 $\frac{1}{4}$ „
200 . . . . .	= 7 . . . . . and 24 „
1 Decilitre = 1 hectogramme, 100 . . . . .	= 3 . . . . . and 230 $\frac{1}{4}$ „
90 . . . . .	= 3 . . . . . and 76 $\frac{1}{3}$ „
80 . . . . .	= 2 . . . . . and 359 $\frac{1}{2}$ „
70 . . . . .	= 2 . . . . . and 205 $\frac{1}{3}$ „
60 . . . . .	= 2 . . . . . and 51 „
50 . . . . .	= 1 . . . . . and 334 „
40 . . . . .	= 1 . . . . . and 179 $\frac{1}{4}$ „
30 . . . . .	= 1 . . . . . and 25 $\frac{1}{4}$ „
20 . . . . .	= . . . . . 308 $\frac{2}{3}$ „
1 Centilitre = 1 dekagramme, 10 . . . . .	= . . . . . 154 $\frac{1}{3}$ „
5 . . . . .	= . . . . . 77 $\frac{1}{6}$ „
1 Millilitre = *1 gramme, 1 . . . . .	nearly 15 $\frac{1}{4}$ „
0·5 . . . . .	7 $\frac{1}{4}$ „
1 decigramme, 0·1 . . . . .	„ 1 $\frac{1}{2}$ „
0·05 . . . . .	„ $\frac{3}{4}$ „
centigramme, 0·01 . . . . .	„ $\frac{2}{3}$ „
0·005 . . . . .	„ $\frac{1}{3}$ „
1 milligramme, 0·001 . . . . .	„ $\frac{1}{6}$ „

\* A *Millilitre* is the volume of one gramme of Distilled Water at its greatest density, 4° C. (39·2° F.). A *Cubic Centimetre* is the volume of the same weight of water at 60° F. (15·5° C.).

TABLE OF COMPARISON OF THE FAHRENHEIT  
WITH THE CENTIGRADE\* AND RÉAUMUR'S  
THERMOMETER.

Fahr.	Cent.	Réau.	Fahr.	Cent.	Réau.	Fahr.	Cent.	Réau.
212	100	80	136·4	58	46·4	60·8	16	12·8
210·2	99	79·2	134·6	57	45·6	59	15	12
208·4	98	78·4	132·8	56	44·8	57·2	14	11·2
206·6	97	77·6	131	55	44	55·4	13	10·4
204·8	96	76·8	129·2	54	43·2	53·6	12	9·6
203	95	76	127·4	53	42·4	51·8	11	8·8
201·2	94	75·2	125·6	52	41·6	50	10	8
199·4	93	74·4	123·8	51	40·8	48·2	9	7·2
197·6	92	73·6	122	50	40	46·4	8	6·4
195·8	91	72·8	120·2	49	39·2	44·6	7	5·6
194	90	72	118·4	48	38·4	42·8	6	4·8
192·2	89	71·2	116·6	47	37·6	41	5	4
190·4	88	70·4	114·8	46	36·8	39·2	4	3·2
188·6	87	69·6	113	45	36	37·4	3	2·4
186·8	86	68·8	111·2	44	35·2	35·6	2	1·6
185	85	68	109·4	43	34·4	33·8	1	0·8
183·2	84	67·2	107·6	42	33·6	32	0	0
181·4	83	66·4	105·8	41	32·8	30·2	-1	-0·8
179·6	82	65·6	104	40	32	28·4	-2	-1·6
177·8	81	64·8	102·2	39	31·2	26·6	-3	-2·4
176	80	64	100·4	38	30·4	24·8	-4	-3·2
174·2	79	63·2	98·6	37	29·6	23	-5	-4
172·4	78	62·4	96·8	36	28·8	21·2	-6	-4·8
170·6	77	61·6	95	35	28	19·4	-7	-5·6
168·8	76	60·8	93·2	34	27·2	17·6	-8	-6·4
167	75	60	91·4	33	26·4	15·8	-9	-7·2
165·2	74	59·2	89·6	32	25·6	14	-10	-8
163·4	73	58·4	87·8	31	24·8	12·2	-11	-8·8
161·6	72	57·6	86	30	24	10·4	-12	-9·6
159·8	71	56·8	84·2	29	23·2	8·6	-13	-10·4
158	70	56	82·4	28	22·4	6·8	-14	-11·2
156·2	69	55·2	80·6	27	21·6	5	-15	-12
154·4	68	54·4	78·8	26	20·8	3·2	-16	-12·8
152·6	67	53·6	77	25	20	1·4	-17	-13·6
150·8	66	52·8	75·2	24	19·2	-0·4	-18	-14·4
149	65	52	73·4	23	18·4	-2·2	-19	-15·2
147·2	64	51·2	71·6	22	17·6	-4	-20	-16
145·4	63	50·4	69·8	21	16·8	-5·8	-21	-16·8
143·6	62	49·6	68	20	16	-7·6	-22	-17·6
141·8	61	48·8	66·2	19	15·2	-9·4	-23	-18·4
140	60	48	64·4	18	14·4	-11·2	-24	-19·2
138·2	59	47·2	62·6	17	13·6	-13	-25	-20

Reductions from one scale to another are easily made by the following calculation :—

Fahrenheit to Centigrade, deduct 32°, multiply by 5, and divide by 9.

Centigrade to Fahrenheit, multiply by 9, divide by 5, and add 32°.

Réaumur to Fahrenheit, multiply by 9, divide by 4, and add 32°.

\* Celsius first proposed this scale, which is also called 'Celsius.

## ALCOHOL TABLE.

Specific Gravity at 60° F. (15·6° C.).	Absolute Alcohol by weight. Per cent.	Absolute Alcohol by volume. Per cent.	Specific Gravity at 60° F. (15·6° C.).	Absolute Alcohol by weight. Per cent.	Absolute Alcohol by volume. Per cent.
1·000	0·00	0·00	.894	60·67	68·33
.998	1·06	1·34	.892	61·50	69·11
.996	2·28	2·86	.890	62·36	69·92
.994	3·41	4·27	.888	63·26	70·77
.992	4·62	5·78	.886	64·13	71·58
.990	5·87	7·32	.884	65·00	72·38
.988	7·27	9·04	.882	65·83	73·15
.986	8·64	10·73	.880	66·70	73·93
.984	10·08	12·49	.878	67·54	74·70
.982	11·62	14·37	.876	68·38	75·45
.980	13·15	16·24	.874	69·21	76·20
.978	14·82	18·25	.872	70·04	76·94
.976	16·46	20·24	.870	70·84	77·64
.974	18·08	22·18	.868	71·67	78·36
.972	19·67	24·08	.866	72·52	79·12
.970	21·31	26·04	.864	73·38	79·86
.968	22·85	27·86	.862	74·23	80·60
.966	24·38	29·67	.860	75·14	81·40
.964	25·86	31·40	.858	76·04	82·19
.962	27·21	32·98	.856	76·88	82·90
.960	28·56	34·54	.854	77·71	83·60
.958	29·87	36·04	.852	78·52	84·27
.956	31·00	37·34	.850	79·32	84·93
.954	32·25	38·75	.848	80·13	85·59
.952	33·47	40·14	.846	80·96	86·28
.950	34·52	41·32	.844	81·76	86·93
.948	35·50	42·40	.842	82·54	87·55
.946	36·56	43·56	.840	83·31	88·16
.944	37·67	44·79	.838	84·08	88·76
.942	38·78	46·02	.836	84·88	89·38
.940	39·80	47·13	.834	85·65	89·99
.938	40·80	48·21	.832	86·42	90·58
.936	41·80	49·29	.830	87·19	91·17
.934	42·76	50·31	.828	87·96	91·75
.932	43·71	51·32	.826	88·76	92·36
.930	44·64	52·29	.824	89·54	92·94
.928	45·55	53·24	.822	90·29	93·49
.926	46·46	54·19	.820	91·00	94·00
.924	47·36	55·13	.818	91·71	94·51
.922	48·27	56·07	.816	92·44	95·03
.920	49·16	56·98	.814	93·18	95·55
.918	50·09	57·92	.812	93·92	96·08
.916	50·96	58·80	.810	94·62	96·55
.914	51·79	59·63	.808	95·32	97·02
.912	52·68	60·52	.806	96·03	97·51
.910	53·57	61·40	.804	96·70	97·94
.908	54·48	62·31	.802	97·37	98·37
.906	55·41	63·24	.800	98·03	98·80
.904	56·32	64·14	.798	98·66	99·16
.902	57·21	65·01	.796	99·29	99·55
.900	58·05	65·81	.794	99·94	99·96
.898	58·95	66·69	.7938	100·00	100·00
.896	59·83	67·53			

SYMBOLS AND ATOMIC WEIGHTS OF THE ELEMENTARY BODIES, MENTIONED IN THE BRITISH PHARMACOPŒIA.

H = 1·00.

Elementary Bodies.	Symbols and Atomic Weights.	International Atomic Weights. H = 1.
Aluminium . . . . .	Al = 26·90	26·90
Antimony (Stibium) . . . . .	Sb = 119·00	119·30
Arsenium . . . . .	As = 74·50	74·40
Barium . . . . .	Ba = 136·40	136·40
Bismuth . . . . .	Bi = 207·30	206·90
Boron. . . . .	B = 10·85	10·90
Bromine . . . . .	Br = 79·35	79·36
Calcium . . . . .	Ca = 39·71	39·80
Carbon . . . . .	C = 11·91	11·91
Cerium . . . . .	Ce = 139·20	139·20
Chlorine . . . . .	Cl = 35·19	35·18
Chromium . . . . .	Cr = 51·74	51·70
Copper (Cuprum) . . . . .	Cu = 63·12	63·10
Gold (Aurum) . . . . .	Au = 195·70	195·70
Hydrogen . . . . .	H = 1·00	1·00
Iodine . . . . .	I = 125·90	125·90
Iron (Ferrum) . . . . .	Fe = 55·60	55·50
Lead (Plumbum) . . . . .	Pb = 205·35	205·35
Lithium . . . . .	Li = 6·97	6·98
Magnesium . . . . .	Mg = 24·18	24·18
Manganese . . . . .	Mn = 54·52	54·60
Mercury (Hydrargyrum). . . .	Hg = 198·80	198·50
Nitrogen. . . . .	N = 13·94	13·93
Oxygen . . . . .	O = 15·88	15·88
Phosphorus . . . . .	P = 30·80	30·77
Platinum . . . . .	Pt = 193·30	193·30
Potassium (Kalinm) . . . . .	K = 38·83	38·86
Silver (Argentum) . . . . .	Ag = 107·11	107·12
Sodium (Natrium). . . . .	Na = 22·88	22·88
Sulphur . . . . .	S = 31·82	31·83
Tin (Stannum) . . . . .	Sn = 118·20	118·10
Zinc . . . . .	Zn = 64·91	64·90

## ABBREVIATIONS.

<i>Allen</i>	=Allen's Commercial Organic Analysis.
<i>A.J.P.</i>	=American Journal of Pharmacy.
<i>St. Bartholomew's</i>	=The Pharmacopœia of St. Bartholomew's Hospital (1900)
<i>B.M.J.</i>	=British Medical Journal.
<i>B.M.J.E.</i>	=British Medical Journal Epitome.
<i>B.P.</i>	=British Pharmacopœia, 1898. [1901].
<i>B.P.C.</i>	=British Pharmaceutical Conference (Unofficial Formulary)
<i>British Skin</i>	=Pharmacopœia of British Hospital for Diseases of the Skin.
<i>C.D.</i>	=Chemist and Druggist. (Hospital (1901).
<i>Central Throat</i>	=Pharmacopœia of the Central London Throat and Ear
<i>City of London</i>	=Pharmacopœia of the City of London Hospital for Diseases of the Chest (1899). [1899].
<i>East London</i>	=Pharmacopœia of the East London Hospital for Children
<i>Guy's</i>	=Pharmacopœia of Guy's Hospital (1899).
<i>I.M.G.</i>	=Indian Medical Gazette.
<i>I.M.R.</i>	=Indian Medical Record.
<i>J.C.S. Abs.</i>	=Journal of the Chemical Society Abstracts.
<i>J.C.S. Trans.</i>	=Journal of the Chemical Society Transactions.
<i>J.S.C.I.</i>	=Journal of the Society of Chemical Industry.
<i>King's</i>	=Pharmacopœia of King's College Hospital (1901).
<i>L.</i>	=Lancet.
<i>London</i>	=Pharmacopœia of the London Hospital (1901).
<i>L.M.R.</i>	=London Medical Recorder.
<i>London Ophthalmic</i>	=Pharmacopœia of the Royal London Ophthalmic Hospital (late Moorfields) (1901).
<i>M.A.</i>	=Medical Annual.
<i>M.P.</i>	=Medical Press and Circular.
<i>M.T.</i>	=Medical Times and Gazette.
<i>Merck</i>	=Merck's Archives.
<i>Middlesex</i>	=Pharmacopœia of Middlesex Hospital (1899).
<i>Murrell</i>	=What do in cases of Poisoning (Murrell).
<i>P.J.</i>	=Pharmaceutical Journal (Second, Third, and Fourth Series).
<i>P.L.</i>	=Pharmacopœia Londinensis, 1851.
<i>P.R.</i>	=Pharmaceutical Record (New York).
<i>Pr.</i>	=Practitioner.
<i>Ringer</i>	=Ringer's Handbook of Therapeutics.
<i>Samaritan</i>	=Pharmacopœia of the Samaritan Free Hospital (1892).
<i>Squibb</i>	=Squibb's Ephemeris. [Skin (1898)].
<i>St. John's</i>	=Pharmacopœia of St. John's Hospital for Diseases of the
<i>St. Thomas'</i>	=Pharmacopœia of St. Thomas' Hospital (1902).
<i>T.G.</i>	=Therapeutic Gazette (Philadelphia).
<i>Throat</i>	=Pharmacopœia of the Hospital for Diseases of the Throat (Golden Square) (1901).
<i>University</i>	=Pharmacopœia of University College Hospital (1904).
<i>U.S.N.F.</i>	=National Formulary of the American Pharmaceutical Association.
<i>Victoria</i>	=Pharmacopœia of the Victoria Hospital for Children (1904).
<i>Westminster</i>	=Pharmacopœia of the Westminster Hospital (1902).
<i>Westminster Ophthalmic</i>	=Pharmacopœia of the Westminster Ophthalmic Hospital (1896).
<i>Y.B.P.</i>	=Year-book of Pharmacy.

EXAMPLE : *L.* '04, i. 56, refers to Lancet, 1904, Volume I., page 56.

Austr., Austr. Add., Belg., Dan., Dutch, Dutch Supp., Fr., Fr. Supp., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss, U.S., refer to the following Foreign Pharmacopœias :-

Austrian . . . . .	1889	French . . . . .	1884	Norwegian . . . . .	1895
" Addendum . . . . .	1900	" Supplement . . . . .	1895	Portuguese . . . . .	1876
Belgian . . . . .	1885	German . . . . .	1900	Russian . . . . .	1902
Danish . . . . .	1893	Hungarian . . . . .	1888	Spanish . . . . .	1884
Dutch . . . . .	1889	Italian . . . . .	1902	Swedish . . . . .	1901
" Supplement . . . . .	1902	Japanese . . . . .	1891	Swiss . . . . .	1893
		Mexican . . . . .	1896	United States . . . . .	1890

# MATERIA MEDICA,

WITH

## COMPOUNDS AND PREPARATIONS.

Not Official.

### ABSINTHIUM.

WORMWOOD.

12 The leaves and flowering tops of *Artemisia Absinthium*. The drug possesses an aromatic odour and a very bitter taste. It contains a crystallisable bitter principle, **Absinthin**, slightly soluble in Water, readily in Absolute Alcohol, Chloroform and Ether; also a volatile oil, to which its physiological properties are due.

**Medicinal Properties.**—Tonic and febrifuge. Alcohol containing it is much used on the Continent as a beverage; its excessive use causes the disease known as absinthism.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital. (Assenzio), Mex., Norw., Port. (Losna), Russ., Span. (Ajenjo), Swed., Swiss, and U.S.** An extract is official in Belg., Fr., Ger., Ital., Port., Russ., Span. and Swed.

**TINCTURA ABSINTHII.**—Wormwood, 1; Alcohol (60 p.c.), to make 10.

**Dose.**—1 to 4 fl. dram. = 3·6 to 14·2 c.c.

**Official in Belg., Dan., Dutch Supp., Fr., Ger., Ital., Mex., Norw., Port., Russ., Span. and Swiss,** 1 in 5; Austr., Hung. and Swed. (compound), 1 in 10; Fr. (compound), 1 in 40; all by weight.

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### ACACIÆ GUMMI.

GUM ACACIA.

A colourless or yellowish product, obtained from *Acacia Senegal* and other species.

**Solubility.**—1 in 1 of Water. Insoluble in Absolute Alcohol, Ether and Oils.

**Medicinal Properties.**—Demulcent. Allowed to dissolve slowly in the mouth, allays tickling cough. For a demulcent drink, 1 of Mucilage, 1 of Syrup, and 20 of Water.

**Prescribing Notes.**—It is chiefly used in the form of Mucilage in cough linctuses and lozenges, and to render oils, etc., emulsive with aqueous fluids.

In an 8 oz. mixture 3 drm. of Mucilage of Gum Acacia are usually required for 1 oz. of oils or resinous tinctures, and 10 drm. for 1 oz. of Balsam of Copaiba. The Mucilage should be put into a mortar and the oil added by degrees with constant trituration until an emulsion is formed, then the water or other aqueous fluid can be added by degrees. Resinous tinctures should be added to the Mucilage which has been first diluted with twice its volume of Water, but Fixed and Volatile Oils are best added to the undiluted Mucilage. It is impossible to make a nice emulsion with Oil of Male Fern unless the Mucilage be quite fresh; in such case it is better to make the Mucilage at the time by rubbing 2 of powdered Gum with 3 of Water. Another method, which gives good results with fixed oils, is to replace the Mucilage by half its weight of powdered Gum Acacia, rub the oil with the powder, then add all at once Water equal to double the weight of the powder and rub till an emulsion is formed; now add by degrees the remainder of any aqueous liquid ordered in the prescription. Resin of Copaiba makes a nice emulsion with powdered Gum and Water: the Resin is liquefied in a warm mortar, the powdered Gum mixed with it and then the Water added as in the last instance. Mucilage is used to suspend insoluble powders in mixtures, but in some cases (Bismuth salts for instance) Tragacanth answers better. It used to be employed for making powders into pills, but they soon become hard, and it is now replaced by 'Dispensing Syrup' (see 'Glycerin'), Glucose, Syrup of Glucose, 'Diluted Glucose,' or Glycerin of Tragacanth.

**Official Preparations.**—Mucilago Acaciæ; also used in the preparation of Pulvis Amygdalæ Compositus, Pulvis Tragacanthæ Compositus, and all Trochisci.

**Not Official.**—Mistura Mucilaginosa, Potion Gommeuse, Sirop de Gomme, Syrupus Acaciæ; also used in the preparation of Unna's Gum Pastes.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

### MUCILAGO ACACIÆ. MUCILAGE OF GUM ACACIA.

4 of washed Gum Acacia dissolved in 6 of Water; the product measures about 8 $\frac{3}{4}$ .

**Dose.**—1 to 4 fl. drm. = 3·6 to 14·2 c.c., or more.

Mucilage keeps well if made cold, poured into small bottles quite full, and stored in a cool place, but if kept carelessly it becomes sour very quickly in hot weather, and its emulsive property is impaired; if made with hot Water the change is more rapid.

**Incompatibles.**—Strong Alcohol and Sulphuric Acid; Borax, Ferric salts and Lead Subacetate render it gelatinous. It is not affected by neutral Lead Acetate.

**Official in** Dutch and Port., 2 and 3; Fr. and Mex., 1 and 1; Austr., Dan., Ger., Hung., Ital., Jap., Norw., Russ., Swed. and Swiss, 1 and 2; Span., 1 and 3; Belg., 1 and 4—also M. Spissa, 1 and 2—and M. Levis, 1 and 9; U.S., 34 and 66.

### Not Official.

**MISTURA MUCILAGINOSA.**—Syrup, 30 min.; Mucilage of Gum Acacia, 2 fl. drin.; Water to 1 oz.—*Guy's.*

**POTION GOMMEUSE (Fr.).**—Powdered Gum Arabic, 1; Simple Syrup, 3; Orange Flower Water, 1; Water, 10. All by weight.

**SIROP DE GOMME (Fr.).**—Gum, 10; Sugar, 67; Water, 43. Dissolve the Gum in cold Water, then the Sugar by the aid of a water-bath; and strain.

**SYRUPUS ACACIÆ (U.S.).**—Mucilage of Gum Acacia, 1; Syrup, 3. Mix when required, as it does not keep well.

**UNNA'S GUM PASTES.**—A mixture of equal parts of Mucilage of Gum Acacia and Glycerin, with which are incorporated various medicaments such as Zinc Oxide and Mercuric Oxide.

**ACACIÆ CORTEX.**—The dried bark of *Acacia Arabica*, and also the dried bark of *Acacia decurrens*, the Sydney Black Wattle, or of the Victorian and Tasmanian Black Wattle, are Official in *Ind.* and *Col. Add.* for India and the Australian and Eastern Colonies.

**Decoctum Acaciæ Corticis** (1 in 16) is also Official in *Ind.* and *Col. Add.* for India and the Australian and Eastern Colonies.

See also **Gummi Indicum.**

### ACALYPHA.

The fresh and the dried herb of *Acalypha indica* are Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

**Extractum Acalyphæ Liquidum** (1 in 1), dose 5 to 30 minims = 0·3 to 1·8 c.c.

**Succus Acalyphæ**, the juice expressed from the bruised fresh *Acalypha* 3; Alcohol (90 p.c.) q.s. to yield 4; dose, 1 to 4 fl. dram. = 3·6 to 14·2 c.c. Both are Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

## ACETANILIDUM.

ACETANILIDE.

$C_8H_9NO$ , eq. 134·10.

*B.P.Syn.*—PHENYL-ACETAMIDE. Commonly known as  
'Antifebrin.'

In colourless crystals, having a burning and somewhat bitter taste.

**Solubility.**—1 in 190 of Water; 1 in 18 of boiling Water; 1 in 12 of Alcohol (60 p.c.); 1 in 4 of Alcohol (90 p.c.); about 1 in 40 of Glycerin; it is also soluble in Ether, Benzol, and Chloroform.

**Medicinal Properties.**—A powerful antipyretic. Useful in the pyrexia of typhoid fever, erysipelas, phthisis, acute rheumatism, and small-pox. An analgesic in neuralgia and other painful nerve affections.

In some cases it produces profuse sweating, accompanied with cyanosis and rigor; it is therefore safer to commence with small doses.

From the report of a committee of the British Medical Association, it would appear that Antifebrin is less safe and less constant in its action than Antipyrine, and still less so than Phenacetin; but it is possible that the ill effects noted were brought about by injudicious dosage. To give it in doses of 5, 6, 8, or even 10 grains, still more to repeat these after a short interval, is highly injudicious; such doses are excessive. The relative dose appears to be about one-fifth that of Antipyrine (see Phenazonum).—*B.M.J.* '94, i. 89.

Cases of poisoning by Acetanilide—death after taking 60 grains in 6 powders.—*B.M.J.E.* '02, i. 20; *L.* '02, i. 243.

**Dose.**—1 to 3 grains = 0·06 to 0·2 grammes.

*Ph. Ger.* maximum single dose, 0·5 grammes; maximum daily dose, 1·5 grammes.

**Prescribing Notes.**—*Best given in wafer paper or cachets, or dissolved in some weak spirit. May also be suspended in Water by Compound Powder of Tragacanth or Mucilage of Gum Acacia. It is sometimes given as a compressed tablet.*

**Not Official.**—*Mistura Acetanilidi, Pulvis Acetanilidi Compositus, Ammonol, Hydracetin, Phenalgin, Bromoacetanilide.*

**Official in Austr., Dan., Dutch, Fr., Ger., Hung., Jap., Mex., Norw., Russ., Swiss and U.S.**

**MISTURA ACETANILIDI.**—Acetanilide, 5 grains; Compound Tincture of Lavender, 1 fl. dram.; Spirit of Chloroform, 15 minims; Water to 1 fl. oz.

**PULVIS ACETANILIDI COMPOSITUS (B.P.C.).**—Acetanilide, 7; Caffeine, 1; Sodium Bicarbonate, 2.

**Dose.**—3 to 5 grains = 0·2 to 0·32 grammes.

The specialities, **Antikamnia**, **Antisepsin**, and **Antitoxine**, all contain Acetanilide.

**AMMONOL.**—An ammoniated derivative of Acetanilide. Soluble about 1 in 110 of Water; partly soluble in Alcohol (90 p.c.).

**Dose.**—5 to 10 grains = 0·32 to 0·65 grammes. The doses of the **Salicylate**, **Bromide**, and **Lithiate** are practically the same. The Salicylate darkens on exposure to light; it is soluble 1 in 50 of Water.

**HYDRACETIN** (Acetylphenylhydrazin).—Colourless, prismatic crystals, soluble in Water and in Alcohol (90 p.c.). It is a powerful but dangerous antipyretic; has been given internally in doses of 1 to 2 grains, and has been used externally as a 10 p.c. ointment in psoriasis.

**PHENALGIN.**—An ammoniated derivative of Acetanilide. A white powder soluble about 1 in 110 of Water; partly soluble in Alcohol (90 p.c.).

**Dose.**—5 to 20 grains = 0·32 to 1·3 grammes.

**BROMOACETANILIDE** (Antisepsin; Asepsin).—Colourless crystals, practically insoluble in Water and Alcohol (90 p.c.).

**Dose.**—3 to 15 grains = 0·2 to 1 grammes.

### Not Official.

#### ACETOPHENONE.

*Syn.*—**HYPNONE** **METHYLPHENYLACETONE**; **METHYL-BENZOYL**.

A colourless liquid, with a persistent odour of Essential Oil of Almonds. Insoluble in Water; soluble 1 in 90 of Glycerin; mixes in all proportions with Alcohol (90 p.c.), Ether, Chloroform, and Olive Oil.

Introduced as hypnotic, but rarely used now.

**Dose.**—2 to 8 minims = 0·1 to 0·5 c.c. In Sy:ip, or dissolved in Almond Oil and given in capsules.

**Official in Dutch Supp.**

### Not Official.

#### ACETUM.

#### VINEGAR.

An acid liquid, containing about 5 p.c. of Hydrogen Acetate, produced by the alcoholic and acetous fermentation of a vegetable juice or infusion.

**Medicinal Properties.**—Refrigerant and sialagogue. As a cooling lotion in bruises and sprains. Spunged on the skin in fever or given internally checks excessive perspiration and lowers temperature. A wineglassful of Vinegar is useful to counteract the intoxicating effects of Alcohol.

The most ready and safe antidote in cases of poisoning by alkalis.

A hæmostatic in post-partum haemorrhage.—*B.M.J.* '84, i. 56.

Lewin recommends Vinegar to prevent sickness after Chloroform, by immediately replacing the inhaler by a linen cloth soaked in Vinegar, and allowing this to remain over the patient's face for at least three hours after the completion of the operation.—*B.M.J.E.* '95, ii. 63.

**Dose.**—1 fl. dram. to 1 fl. oz. = 3·6 to 28·4 c.c., diluted.

**Incompatibles.**—Ammonia, Lime, fixed Alkalies, and Carbonates.

Official in Austr., Belg., Ger., Hung. and Russ., 6 p.c. Acetic Acid; Dan., 4·7 p.c.; Ital., 5-6 p.c.; Port., 7-9 p.c.; Span., sp. gr. 1·018-1·020; Swiss, 5 p.c.: all are without Sulphuric Acid; Mex., Vinagre.

**ACIDUM PYROLIGNEOSUM CRUDUM.**—A brown liquid having an odour of Tar and Acetic Acid, and containing about 6 p.c. of the latter. Deposits a tarry substance on standing for some time. It is a good antiseptic.

Official in Dan., Ger. and Russ.

A Rectified Pyroligneous Acid is also official in Ger. and Russ., containing 4·5 and 5 p.c. of Acetic Acid respectively.

## ACIDUM ACETICUM.

### ACETIC ACID.

A bright, colourless liquid, sp. gr. 1·044, possessing an acetous odour, and containing 33 p.c. of Hydrogen Acetate.

**Medicinal Properties.**—A local stimulant and antiseptic. Used in parasitic skin diseases. A good application for ringworm of the body. As a gargle .15 minimis to 1 oz. of Water. Diluted Acetic Acid is used for the same purposes as Vinegar.

**Official Preparations.**—Acidum Aceticum Dilutum. Used in the preparation of Liquor Ammonii Acetatis, Oxymel, and Oxymel Scillæ.

Official in Jap. and U.S., 36 p.c. Acid; Dan., Dutch, Norw. and Russ., 30 p.c.; Port. (Acido Acetico Hydratado), 38 p.c.; Fr., 50 p.c.; Swed., 25 p.c.

The Acidum Aceticum of Belg., Ger., Span. and Swiss, is practically Glacial; Belg. and Ger., 96 p.c.; Span., 94-98 p.c.

The Acidum Aceticum Dilutum of Austr., Ger., Hung., and Swiss more resembles B.P. Acidum Aceticum; Austr., 20·4 p.c.; Hung., 20 p.c.; Ger. and Swiss, 30 p.c.

**ACIDUM ACETICUM DILUTUM. DILUTED ACETIC ACID.**

Acetic Acid,  $2\frac{1}{2}$ , diluted with Distilled Water q.s. to yield 20. Sp. gr. 1.006. Contains 4.27 p.c. of Hydrogen Acetate.

**Dose.**— $\frac{1}{2}$  to 2 fl. dram. = 1.8 to 7.1 c.c.

**Official Preparations.**—Used in the preparation of Acetum Ipecacuanhæ, Acetum Scillæ and Liquor Morphinæ Acetatis.

**Official in Austr.,** 20.4 p.c. Acetic Acid; Ger. and Swiss, 30 p.c.; Hung., 20 p.c.; Ital. 19 p.c.; Belg., 9.6 p.c.; Jap. and Dutch, 6 p.c.; Port. (A. A. Aquoso), 10 p.c.; Russ., 5 p.c.; U.S., 6 p.c.; Mex., 8.63 p.c. *See also Acetum.*

## ACIDUM ACETICUM GLACIALE.

### GLACIAL ACETIC ACID.

A bright, colourless liquid, having a pungent acetous odour; it should contain 99 p.c. of Hydrogen Acetate.

**HC<sub>2</sub>H<sub>3</sub>O<sub>3</sub>,** eq. 59.58.

It crystallises in the cold, but again becomes fluid at about 60° F. (15.5° C.).

It is three times as strong as Acidum Aceticum, and nearly twenty-four times as strong as Acidum Aceticum Dilutum.

**Solubility.**—It dissolves Camphor, Gum-resins, Resins, and Volatile Oils. It mixes with Water and Absolute Alcohol.

**Medicinal Properties.**—Escharotic; used for corns and warts; it speedily vesicates, and thus is useful in cases where Cantharides may do harm by being absorbed, but it causes much pain, and if applied incautiously may produce a most troublesome sore. When scented, it is employed to fill vinaigrettes containing sponge or fragments of Potassium Sulphate.

**Official Preparations.**—Used in the preparation of Acetum Cantharidis, Linimentum Terebinthinæ Aceticum, and Liquor Ferri Acetatis.

**Not Official.**—Acidum Aceticum Aromaticum, Acetum Aromaticum, Vinaigre Anglais, Vinaigre des Quatre Voleurs, Vapor Acidi Acetici, Acidum Trichloraceticum.

**Antidotes.**—Large quantity of Soap and Water to be swallowed; Lime Water, or Chalk and Water; Fluid Magnesia. Stomach-tube *not* to be used.—*Murrell.*

**Official in Austr., Hung. and Swed.** (A. A. Concentratum), Belg., Ger. and Swiss (Acidum Aceticum), Ital. (Acido Acetico Concentrato), Dutch Supp. and Russ. (A. A. Glaciale), all 96 p.c.; Jap., 96 p.c.; Mex. (Acido Acetico Cristalizable); Span. (Acido Acetico), 94–98 p.c.; U.S., at least 99 p.c.; Fr. (Acide Acétique Crystallisable), and Port. (A. A. Glacial), nearly 100 p.c.

## Not Official.

**ACIDUM ACETICUM AROMATICUM** (*Belg.*).—Glacial Acetic Acid, 72; Oil of Cloves, 9; Oil of Lavender, 6; Oil of Orange, 6; Oil of Bergamot, 3; Oil of Thyme, 3; Oil of Cinnamon, 1. All by weight; mix and filter.

**ACETUM AROMATICUM** (*Ger.*).—Oils of Lavender, Peppermint, Rosemary, Juniper, and Cinnamon, of each 1; Oil of Lemon, 2; Oil of Cloves, 2; Spirit, 441; Diluted Acetic Acid, 650; Water, 1900. All by weight; digest 8 days, and filter.

Preparations containing similar ingredients but in different proportions are given in *Dutch Supp.*, *Swed.* and *U.S.N.F.*

**VINAIGRE ANGLAIS** (*Fr.*).—Glacial Acetic Acid, 500; Camphor, 50; Oil of Cinnamon, 1; Oil of Cloves, 1; Oil of Lavender,  $\frac{1}{2}$ . All by weight; mix.

**VINAIGRE DES QUATRE VOLEURS** (*Fr.*).—Tops of the Greater and Lesser Wormwood (*Artemisia Absinthium* and *A. pontica*), Rosemary, Sage, Peppermint, Rue, and Lavender Flowers, of each 15; Calamus Root, Cinnamon, Cloves, Nutmeg, and Garlic, of each 2; Camphor, 4; Glacial Acetic Acid, 15; Strong White Vinegar, 1000. Dissolve the Camphor in the Glacial Acid; macerate the other ingredients in the Vinegar for ten days; press and mix.

**VAPOR ACIDI ACETICI**.—Glacial Acetic Acid and Acetic Acid, equal parts; mix. Two teaspoonfuls in a pint of water at 140° F. for each inhalation. Sedative and antiseptic; used for inflammatory sore throat of scarlet fever.—*Throat.*

**ACIDUM TRICHLORACETICUM** (*Dutch Supp.* and *Ger.*).—A substitution product of Acetic Acid, but it is most readily prepared by acting on Chloral Hydrate with Nitric Acid in sunlight. Colourless, deliquescent crystals, which fuse at 55° C. (131° F.), and boil at 195° C. (383° F.).

Readily soluble in Water and in Alcohol (90 p.c.).

It is a powerful antiseptic and caustic. 1 or 2 p.c. solutions have been used as a dressing for wounds, and as a lotion and spray in acute coryza. Internally, in dilute solution, 2 to 5 grains for adults,  $\frac{1}{2}$  to 1 grain for children, in gastric catarrh and summer diarrhoea.—*L.M.R.* '83, 285; *T.G.* '85, 63; and '94, 349.

A test for albumen in urine.—*B.M.J.* '89, ii. 1114; and '90, i. 681.

**ACIDUM ARSENIOSUM.****ARSENIOUS ANHYDRIDE.**

*B.P. Syn.*.—ARSENIC; WHITE ARSENIC; ARSENIOUS ACID.

$\text{As}_4\text{O}_6$ , eq. 393·28.

A heavy white odourless and tasteless powder, or in white opaque or glassy masses. Obtained by roasting certain arsenical ores,

**Solubility.**—1 in 100 of cold Water; 1 in 20 of boiling Water; 1 in 500 of Alcohol (90 p.c.); 1 in 6 of Hydrochloric Acid; 1 in 8 of Glycerin; 1 in 11 of Solution of Potash; 1 in 40 of saturated solution of Sodium Carbonate.

These figures are approximate. The published solubilities of Arsenious Acid are very contradictory, owing, no doubt, to the specimens examined being either vitreous, opaque, or a mixture of the two, and therefore of different solubilities.

**Medicinal Properties.**—A general tonic and alterative. Valuable in chorea, chronic (not acute) eczema, lichen, acne and psoriasis, in gout and chronic rheumatism, in painful dyspepsia, in neuralgia and spasmodic asthma, especially if anaemic or malarial in origin; in the intervals between the attacks of angina pectoris. Given in pernicious anaemia with good result. Indispensable in all forms of weak heart accompanied by pain. In the form of paste it is used to destroy the pulp before stopping carious teeth. Antiperiodic in malaria; in small doses it is stimulant to nervous system. Best given immediately after meals. Externally is a powerful caustic for fungoid growths, phagedenic and syphilitic ulcers, and requires great care, as there is danger of absorption; but this can be prevented by using sufficient quantity to produce active inflammation.

Small doses of Arsenic, from 3 to 5 minims of Fowler's solution, well diluted, three times a day, the best tonic treatment of the rapid heart of influenza.—*L.* '99, ii. 1079.

Arsenical mixture for the removal of malignant tumours. Arsenious Acid, 1; Absolute Alcohol, 75; Aqua Dest. 75, increasing the strength of Arsenic to 1 in 100, or even 1 in 80.—*B.M.J.E.* '01, ii. 15.

Large doses in chorea. Fowler's solution, 15 to 20 minims three times daily, reduced to 5 minims, and discontinued on the eighth day.—*B.M.J.* '01, ii. 1452.

Arsenic may be administered in solution, in pills, or by injection; injections are painful; Asiatic pills are much used on the Continent; but on the whole the advantages are all in favour of the time-honoured Fowler's Solution.—*L.* '03, i. 784; *B.M.J.* '03, i. 656.

A valuable remedy and a powerful bactericide.—*B.M.J.* '03, ii. 231.

**Dose.**— $\frac{1}{60}$  to  $\frac{1}{15}$  of a grain = 0.001 to 0.004 grammes.

*Ph. Ger.* maximum single dose, 0.005 grammes; maximum daily dose 0.02 grammes.

**Prescribing Notes.**—In solution, tablet or pill. A good pill is made by well triturating with Milk Sugar and massing with 'Diluted Glucose.' Arsenic is usually given immediately after a meal. Solution of Arsenic is frequently prescribed with

*Solution of Strychnine; in such cases the (acid) Liq. Arsenici Hydrochloricus should be ordered, and not the (alkaline) Liquor Arsenicalis.*

**Incompatibles.**—Salts of Iron, Magnesia, Lime Water, and vegetable astringents.

**Official Preparations.**—Liquor Arsenicalis, Liquor Arsenici Hydrochloricus. Other preparations containing Arsenium: Arsenii Iodidum, Ferri Arsenas, Sodii Arsenas, Liquor Sodii Arsenatis and Liquor Arsenii et Hydargyri Iodidi.

**Not Official.**—Liquor Ammonii Arsenitis, Pilula Asiatica, Granula Dioscoridis, Arsenical Paste, Arsenical Fibre, Arsenical Caustic Powders, Levico Water and La Bourboule Water. *See also* Liq. Auri et Arsenii Bromidi (U.S.N.F.), Sodium Cacodylicum, Arsenii Bromidi Liquor.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

**Antidotes.**—The freshly-prepared moist Ferric Hydroxide, or large quantities of Calcined Magnesia; Dialysed Iron, followed by some Common Salt (to ensure precipitation of Ferric Hydroxide); Stomach-tube, Emetics; Mucilaginous drinks, Olive Oil, or Carron Oil; stimulants freely, if much prostration; warmth (hot blankets and bottles).

**Antidotum Arsenici (Belg., Dan., Dutch, Hung., Ital., Jap., Port., Russ., Swiss and U.S.).**

They vary considerably in the quantities of Iron, Magnesia, and Water. Hung., Ital., Jap., Russ., Swiss and U.S. employ Ferric Sulphate; Belg., Dan., Dutch and Port. use Ferric Chloride.

U.S. formula (Ferri Oxidum Hydratum cum Magnesia).—Mix 50 grammes of Solution of Ferric Sulphate (sp. gr. 1.320) with 100 c.c. of Water, and keep the liquid in a large, well-stoppered bottle. Rub 10 grammes of Magnesia with cold Water to a smooth and thin mixture, transfer this to a bottle capable of holding about 1000 c.c., and fill it with Water to about three-fourths of its capacity. When the preparation is wanted for use, shake the Magnesia mixture to a homogeneous, thin magma, gradually add to it the Iron solution, and shake them together until a uniform smooth mixture results.

**NOTE.**—The diluted Solution of Ferric Sulphate, and the mixture of Magnesia with Water, should always be kept on hand, ready for immediate use.

### **LIQUOR ARSENICALIS. ARSENICAL SOLUTION. B.P. Syn.—LIQUOR POTASSÆ ARSENITIS. FOWLER'S SOLUTION.**

Arsenious Anhydride, 87½ grains; Potassium Carbonate, 87½ grains; Compound Tincture of Lavender, 5 fl. drm.; Distilled water, q.s. to form 20 fl. oz. (1 in 100)

11 minims contain  $\frac{1}{10}$  grain.

**Dose.**—2 to 8 minims = 0.1 to 0.5 c.c.

Larger doses are given in chorea.

*Ph. Ger.* maximum single dose, 0·5 grammes; maximum daily dose, 1·5 grammes.

**Official** in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Swed., Swiss. and U.S., 1 Arsenious Acid in 100; Span., 1 in 90.

**LIQUOR ARSENICI HYDROCHLORICUS.** HYDROCHLORIC SOLUTION OF ARSENIC.

Arsenious Anhydride, 87½ grains; Hydrochloric Acid, 2 fl. drm.; Distilled Water, *q.s.* to form 20 fl. oz. (1 in 100)

11 minims contain  $\frac{1}{10}$  grain.

De Valangin's Solution was  $\frac{1}{3}$  of this strength.

**Dose.**—2 to 8 minims = 0·1 to 0·5 c.c.

U.S. 1 of Arsenious Acid in 100.

**LIQUOR ARSENII ET HYDRARGYRI IODIDI.**  
*See* ARSENII IODIDUM.

**ARSENAS FERRI.** *See* FERRI ARSENAS.

**ARSENAS SODII.** *See* SODII ARSENAS.

**ARSENATIS SODII LIQUOR.** *See* LIQUOR SODII ARSENATIS.

Not Official.

**LIQUOR AMMONII ARSENITIS** is made of the same strength as Liquor Arsenicalis; Ammonium Carbonate being substituted for Potassium Carbonate.

**PILULA ASIATICA.**—Arsenious Acid,  $\frac{1}{12}$  grain; Black Pepper,  $\frac{3}{4}$  grain; for one pill.

The quantities vary in different books. Dutch Supp. gives Arsenious Acid,  $\frac{1}{16}$  grain; Black Pepper,  $\frac{3}{4}$  grain. Fr. Codex gives Arsenious Acid,  $\frac{1}{12}$  grain; Black Pepper,  $\frac{3}{4}$  grain. Swed., Pil. Acidi Arseniosi containing  $\frac{1}{65}$  grain in each.

Used as a specific in various chronic skin diseases.

**GRANULA DIOSCORIDIS** (*Fr.* and *Dan.*).—Each granule contains 1 milligramme of Arsenious Acid.

**ARSENICAL PASTE** for Dentists.—Arsenious Acid, 2; Morphine Sulphate, 1; Creosote to make a stiff paste. A quantity of the size of a pin's head is ample for one application. It should be spread on cotton-wool and placed in the tooth. It will thus destroy the sensibility of a carious tooth, and in a few hours the tooth will be ready for stopping. Cocaine has been used in place of Morphine, but it is not so good.

**ARSENICAL FIBRE** for Dentists.—Arsenious Acid, 5; Tannin, 2; Morphine Sulphate, 5; make into a paste with Creosote, mix with cotton wool, and dry. This preparation is an improvement on the paste, for the latter is apt to be squeezed out over the gum

edge of the cavity and cause inflammation of the surrounding tissue.

**ARSENICAL PASTE** (Frères Come's).—For cancer, applied after the surface has been laid bare by the application of caustic potash. Arsenic, 1; Charcoal, 1; Red Mercury Sulphide, 4; Water, *q.s.*

**ARSENICAL CAUSTIC POWDERS.**—Each contains from  $\frac{1}{10}$  grain to  $\frac{1}{2}$  grain of Arsenious Acid to 1 grain of Calomel, Vermilion or Antimony Sulphide, or of any combination of them.

**La Bourboule Water** contains about  $\frac{1}{2}$  grain of Arsenious Anhydride in 20 fl. oz.

**Levico Water** (strong) contains about  $\frac{1}{3}$  grain of Arsenious Anhydride in 20 fl. oz. —

## ACIDUM BENZOICUM.

BENZOIC ACID.

$\text{HC}_7\text{H}_5\text{O}_2$ , eq. 121·13.

Colourless or almost colourless crystals, which are odourless or have a faint odour of Benzoin.

B.P. permits the use of synthetic Benzoic Acid prepared from Toluene and Hippuric Acid, but Austr., Fr., Ger., Swiss and Swed. Pharmacopœias recognise only the Acid prepared from Benzoin.

**Solubility.**—1 in 390 of Water; 1 in 12 of boiling Water; 1 in  $2\frac{3}{4}$  of Alcohol (90 p.c.); 1 in  $2\frac{3}{4}$  of Ether; nearly 1 in 6 of Chloroform; 1 in 12 of Benzol; about 1 in 30 of Glycerin. Borax increases its solubility in Water; 1 of Borax and 1 of Acid are soluble in 100 of Water; Sodium Phosphate also aids its solution. Soluble in aqueous solutions of the Caustic Alkalies and in hot Milk of Lime, forming Benzoates, from which it is precipitated on the addition of Hydrochloric Acid unless the solutions are very dilute.

**Medicinal Properties.**—Stimulant, expectorant, diuretic; given for chronic or subacute inflammation of the bladder with alkaline urine, frequently at first, afterwards at longer intervals and in diminished doses; given in chronic bronchitis where there is much secretion.

Benzoic Acid and its salts are most useful in acidifying alkaline urine; it is changed into Hippuric Acid in passing through the kidneys.

The Sodium and Ammonium salts are preferable, as they are less irritating to the alimentary canal.

It possesses antipyretic and antiseptic properties; a saturated solution in Water delays decomposition of animal fluids; it is also useful in preventing fats from becoming rancid,

As a lotion one grain in an ounce of water, or a stronger solution in Alcohol to be diluted as required.

Given as an antipyretic in acute rheumatism when Salicylic Acid or its Sodium salt either cannot be borne, or fails to produce any effect.

**Dose.**—5 to 15 grains = 0·3 to 1 grammie.

**Prescribing Notes.**—*Given in cachets, in pills made up with 'Diluted Glucose' or in the form of Sodii Benzoas.*

**Official Preparation.**—Trochiscus Acidi Benzoici,  $\frac{1}{2}$  grain in each. Contained in Tinctura Camphoræ Composita, 2 grains in each ounce; Tinctura Opii Ammoniata, 9 grains in each ounce. Used in the preparation of Ammonii Benzoas and Sodii Benzoas.

**Not Official.**—Vapor Acidi Benzoici, Benzoic Gauze, Anæsthesin, Subcutin.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

### TROCHISCUS ACIDI BENZOICI. BENZOIC ACID LOZENGE.

$\frac{1}{2}$  grain of Benzoic Acid in each, with Fruit Basis.

**Dose.**—1 to 5 lozenges.

#### Not Official.

**VAPOR ACIDI BENZOICI.**—Benzoic Acid, 3 grains; Kaolin, 12 grains; rub together and add Water,  $\frac{1}{2}$  oz; Tincture of Tolu, 18 minims. Shake and make up with Water to 1 oz.—*Throat.*

Extremely serviceable in sub-acute affections of the air passages.

**BENZOIC GAUZE.**—Contains 4 p.c. of Benzoic Acid.

**ANÆSTHESIN** (The Ethyl-ester of para-amido-benzoic acid).—A white, odourless powder, slightly soluble in cold Water, readily soluble in Alcohol (90 p.c.) and in Ether. Introduced as a local anaesthetic and as a substitute for Orthoform. Given in cases of gastric irritation.—*B.M.J.E.* '03, ii. 32.

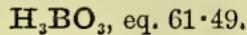
**Dose.**—5 to 10 grains = 0·32 to 0·65 grammie. Maximum daily dose, 40 grains = 2·6 grammes.

**Subcutin,** Anæsthesin paraphenol-sulphonate, is a product of greater stability.

### ACIDUM BORICUM.

BORIC ACID.

*B.P. Syn.*—BORACIC ACID; HYDROGEN BORATE.



Colourless and odourless pearly scales, or a fine white powder.

**Solubility.**—1 in 25 of cold Water; 1 in 3 of boiling

Water; 1 in 4 of Glycerin; 1 in 28 of Alcohol (90 p.c.); insoluble in Ether.

**Medicinal Properties.**—An unirritating local antiseptic and desiccant; it is used as a dressing for granulating and suppurating surfaces in general; as an **eye-wash**, 2 to 5 grains in an ounce of Water; as a **lotion**, **douche**, or as a **mouth-wash**, 10 to 15 grains to an ounce of Water; as a **paint** for the throat, 1 in 5 of Glycerin; as a **pessary**, 10 or 20 grains with Gelatin Mass or Oil of Theobroma.

Given in cystitis associated with decomposing urine.

Used as a **dusting powder** it prevents fetid perspiration.

Small doses internally to sterilise the urine, 48 hours before operation for stricture of the urethra.—*L.* '98, i. 1106.

As a **preservative**, a mixture with equal parts of Borax is more convenient than Boric Acid alone.

So-called danger from the use of Boric Acid in Milk. It is far from proved that small quantities of Boric Acid, if used for a long time, are poisonous to adults or children. Large doses are, however, not considered so innocuous.—*L.* '00, i. 13, 131, 574, 730.

Report of the Departmental Committee appointed to inquire into the uses of preservatives and colouring matters in foods; Boric Acid or mixtures of Boric Acid recommended to be recognised as a legal addition to cream, in amount not exceeding 0·25 p.c. expressed as Boric Acid; and in butter not exceeding 0·5 p.c. expressed as Boric Acid.—*L.* '01, ii. 1683; *J.S.C.I.* '01, 1228.

Report of evidence taken before the Departmental Committee.—*L.* '99, ii. 1484, 1588, 1786, 1866; '00, i. 207, 279, 429, 507, 586, 1409; '00, ii. 276. Opinions differ as to the use of Boric Acid as a preservative of foods.—*L.* '03, i. 749, 837, 920.

Influence of Boric Acid on the metabolism of children. Neither Boric Acid nor Borax in any way affected the general health and well-being of the children.—*B.M.J.* '01, i. 1337; *J.C.S.* '01. Abs. ii. 517.

Influence on health of chemical preservatives of food. Extremely improbable that Boric Acid if used in proper proportions would cause any injurious effect whatever to the average adult, but because of certain possible injurious effects which might be produced, the use of such preserved milk for invalids and young children is to be condemned.—*L.* '99, ii. 1427, 1577.

Use of Boric Acid and Borates in surgery and their internal administration, though usually free from danger, ought to be carefully guarded in patients suffering from kidney affections, and immediately discontinued should dermatitis or other toxic symptoms appear.—*L.* '99, i. 23.

Skin eruptions caused by the use of Boric Acid. Attention drawn to the possibility of fomentations or ointment as sources of toxic symptoms when applied to large areas of skin. Almost all the serious cases of toxic effects of Boric Acid have

occurred where it had been locally applied to an absorptive surface.—*L.* '99, i. 261.

Toxic effects following the use of Boric Acid given internally, also, after irrigation with strong solutions. Erythema followed by dermatitis, which disappeared on discontinuing its use.—*B.M.J.* '99, i. 17, 209; *B.M.J.E.* '01, ii. 91; *L.* '01, ii. 1514.

**Dose.**—5 to 15 grains = 0·32 to 1 grammes.

**Prescribing Notes.**—Can be given in mixture, powders, or cachets, but is more generally used as an application.

**Official Preparations.**—Glycerinum Acidi Borici, and Unguentum Acidi Borici.

**Not Official.**—Boric Acid dressings, Lanolinum Acidi Borici, Mistura Acidi Borici, Pastillus Acidi Borici, Boro-Glyceride and Liquor Magnesii Boratis, Magnesii Boro-citras, Pulvis Acidi Borici Comp.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

### GLYCERINUM ACIDI BORICI.

6 of Boric Acid in powder, treated with 9 of Glycerin (by weight) at 302° F. (150° C.), until the whole is reduced to 10 by weight; it is then mixed with 10 of Glycerin.

**Official in Russ. (Acidum Boro-glycerinatum); U.S. (Glyceritum Boroglycerini) 31 p.c.; Mex. (Glicerina Borica) 5 p.c.**

### UNGUENTUM ACIDI BORICI. [BORIC ACID OINTMENT.]

Finely powdered Boric Acid, 1; Paraffin Ointment, white, 9.  
(1 in 10)

The commercial 'Pulv. Subtil' contains coarse particles; before use it should be passed through a fine lawn sieve.

**Official in Austr. Add., Dan., Dutch, Ger., Norw., Swed. and Swiss, 1 in 10.** The Danish includes a Vaselinum as well as Unguentum; the Norw., a Vaselinum.

### Not Official.

**LANOLINUM ACIDI BORICI.**—Boric Acid, 20 grains; Hydrous Wool Fat, 1 oz.—*Guy's.*

**LINTEUM ACIDI BORICI.**—Lint dipped in a hot saturated aqueous solution of Boric Acid and then dried. Should contain 50 p.c. of Boric Acid, and not be scaly. It is usually coloured pink.

Used as an antiseptic dressing for wounds and ulcers.

**Boric Gauze, 20 p.c.; Boric Wool, 25-50 p.c.** *Fr. Gaze Boriquée, 10 p.c.*

**MISTURA ACIDI BORICI.**—Boric Acid, 10 grains; Dilute Nitro-Hydrochloric Acid, 10 minims; Compound Tincture of Gentian, 1 drm.; Water to 1 oz.—*Lock.*

**PASTILLUS ACIDI BORICI.**—2 grains in each pastil.

**BORO-GLYCERIDE.**—A patent preparation for preserving different kinds of food. A combination of Boric Acid and Glycerin.

A solution, 1 in 20 of Water, has been used as an antiseptic in operative surgery. Used as a paint in throat affections, 1 in 2 of Glycerin; as a tampon in dysmenorrhœa.

**LIQUOR MAGNESII BORATIS.**—*Light* Magnesium Carbonate, 4; Boric Acid, 27; Water 128; boil and filter. Dissolves almost completely, but crystallises out within forty-eight hours. Half the quantity of Light Calcined Magnesia can be used in the place of the Carbonate.

**MAGNESII BORO-CITRAS.**—A white powder, or in glistening scales, prepared by the interaction of Boric and Citric Acids with Magnesium Oxide. Stated to be useful in the uric acid diathesis and for the removal of urinary calculi.—*L.* '03, i. 887, 920.

**Dose.**—15 to 30 grains = 1 to 2 grammes, several times daily.

**Official in Dutch Supp.**

**PULVIS ACIDI BORICI COMP.**—Boric Acid, 1; Zinc Oxide, 3; Starch, 6.—*Guy's.*

Boric Acid, 24; Potassium Bromide, 24; Starch, 99; Iodoform, 2; Morphine Acetate, 1. For insufflation.

**Listerin** and **Zymocide** are liquid specialities containing Boric Acid together with other antiseptics.

**Antipyonine, Aseptin, Branalcane, and Glacialine** are preservative mixtures containing Boric Acid.

### Not Official.

### **ACIDUM CACODYLICUM.**

**CACODYLIC ACID.**   **DIMETHYLARSENIC ACID.**

$(\text{CH}_3)_2\text{O}_2$ , eq. 61·58.

Translucent, colourless, rhombic crystals, odourless when quite pure, but occasionally possessing a faint odour of garlic. Soluble 2 in 1 of Water; 1 in  $3\frac{1}{2}$  of Alcohol (90 p.c.). The acid itself is seldom used in medicine, the most generally used salts being those of Sodium and Iron. See Sodii Cacodylas.

### **ACIDUM CARBOLICUM.**

**PHENOL.**

$\text{C}_6\text{H}_6\text{O}$ , eq. 93·34.

Small crystals which are colourless, but have a tendency to deliquesce and acquire a pink colour on exposure to light and air. Phenol has a characteristic odour and taste. The

chief commercial source is the fraction of coal tar distilling between 150 and 200° C. It may also be synthetically prepared from Benzol. Should be kept in dark amber-coloured, well-stoppered bottles.

A Synthetic Acid has been prepared, and is supplied commercially of very good quality.

**Solubility.**—1 in 13 (or a little less) of Water; 1 in 2 of Olive Oil;  $3\frac{1}{2}$  in 1 of Glycerin; 3 in 1 of Chloroform; 4 in 1 of Ether; 6 in 1 of Alcohol (90 p.c.);  $2\frac{1}{4}$  in 1 of Benzol;  $2\frac{1}{2}$  in 1 of Carbon Bisulphide; freely in Liquor Potassæ, in Liquor Sodæ, and in Volatile Oils.

1 of Water will dissolve in any proportion from 3 to 9 of Carbolic Acid.

**Medicinal Properties.**—Antiseptic, disinfectant, and local anaesthetic. Given as an intestinal and gastric antiseptic in flatulence; and in dilated stomach with fermentative change; it is most efficacious in typhoid in the form of  $1\frac{1}{2}$ -grain pills. It relieves the itching of psoriasis. It has been used with advantage in phthisis, bronchitis, gangrene of the lung and whooping-cough, internally, but more especially as a disinfectant, sprinkled about the room; internally in puerperal fever; as a prophylactic in scarlet fever. Placed in a carious tooth, or cautiously applied to the gum, relieves toothache. Used as a paint for the throat (30 grains to 1 oz. of Glycerin); as a gargle (2 grains to 1 oz.) for tonsillitis attended with fetid breath; if used with a spray apparatus, 3 grains in an oz. of Water; or for inhalations, 20 grains dissolved in a pint of hot Water; as an injection (1 grain to 1 oz. of Water), for the vagina or the bladder, as an antiseptic. Externally, used alone is a powerful caustic; as a lotion (15 to 30 grains to 1 oz.) for foul or syphilitic ulcers, carbuncles, scabies, ringworm and other parasitic skin diseases; (5 grains to 1 oz.) excellent for eczema and eruptions attended with itching; or as the official ointment. For a mouth-wash, see Phenate de Soude, p. 22.

**Carbolic Oil**, 1 or 2 in 40 of Olive Oil; used for dressing scalds and burns.

**Carbolic Solution**, 1 or 2 in 40 of Water; used in surgery as an antiseptic.

2 p.c. solutions have been used for hypodermic injection.

Deep hypodermic injections ( $\frac{1}{2}$  grain to 20 minims Water) have been found most successful in erysipelas, poisoned wounds and deep-seated inflammations.—*Whitla*.

As solutions of Carbolic Acid in strong Alcohol or concentrated Glycerin are not caustic, but become so when diluted with Water, it is suggested that in cases of burning with concentrated Car-

bolic Acid it would be better to remove the Acid with strong Alcohol rather than with Water.—*P.J.* (3) xix. 783.

Actual contact would appear to be necessary for Carbolic Acid to act as a germicide. A few inches from the surface of pure Carbolic Acid in a bottle (open to the air) putrefaction and fermentation go on as rapidly as in the open air.—*P.J.* (3) ii. 545.

As an ointment or plaster (1 in 15 or 20) in lupus.—*M.A.* '94, 416.

Carbolic Acid mixed with 5 to 10 p.c. of Glycerin injected for hydrocele.—*B.M.J.* '86, i. 1164, 1214.

Two p.c. spray for erysipelas.—*B.M.J.* '86, ii. 947.

Injection of a 5 p.c. solution for anthrax.—*B.M.J.* '86, ii. 601; *L.* '87, ii. 1186; *L.M.R.* '89, 422; *M.A.* '94, 79.

One grain in 1 oz. of Water every four hours for vomiting in pregnancy.—*L.* '89, i. 1121.

Enteric fever treated with Carbolic Acid.—*B.M.J.* '97, i. 1344.

Keratin-coated pills in acute diarrhoea.—*L.* '93, ii. 1305.

Hypodermically in the treatment of tetanus, 2 minims in 30 minimis of Water injected three times a day.—*L.* '99, i. 1497; '99, ii. 1589; *B.M.J.E.* '99, i. 15; '00, i. 32.

Treatment of tetanus in horses by hypodermic injections.—*L.* '00, i. 538.

Treatment of influenza.—*L.* '99, i. 958; '00, i. 143, 509, 667, 1030.

The offensiveness of the pustular stage of eruption in small-pox successfully treated by the pure liquefied acid, applied with a small camel's-hair brush to the rash over a certain area of the body each day, commencing with the face and head, until the whole of the vesicles had been touched; care being taken to prevent the acid running on the healthy skin.—*L.* '03, i. 518; '03, ii. 1153, 1781.

In the treatment of plague, 12 grains given in a mixture every two to four hours.—*L.* '99, ii. 1589; '00, i. 614; '03, ii. 753.

As a dressing for burns.—*M.P.* '01, 392.

Fixation of movable kidney by means of strong Carbolic Acid, six cases.—*L.* '02, i. 1822.

Treatment of erysipelas.—*B.M.J.* '02, i. 1142.

Cases of carbolic acid gangrene.—*T.G.* '01, 739; 132 cases of gangrene due to weak solutions of Carbolic Acid.—*Med. Review* '00, 449.

Treatment of vulvar vegetations with pure Carbolic Acid.—*T.G.* '01, 639.

A 5 p.c. solution failed to destroy anthrax spores after twenty-four hours' exposure; but destroyed the bacillus pyocyancus, staphylococcus pyogenes aureus, and the bacilli of typhoid fever, diphtheria, cholera, and tuberculosis.—*London County Council: Report on Disinfectants*, *L.* '02, i. 758.

Carbolic Acid (5 p.c.) and Mercuric Chloride Solution (1 in 1000) proved to be the only real germicides for tubercle bacilli.—*Report of the London County Council on Disinfectants*, *L.* '02 i. 759.

Poisoning from the application of Carbolic Acid to the unbroken skin. A 2 p.c. solution being used as an application for pruritus, followed by the use on another day, after a bath, of a 4 p.c. solution applied to the abdomen, the thighs and the lumbar region. Recovery in ten days.—*L.* '02, i. 1551.

Alcohol stated to be one of the best antidotes in carbolic acid poisoning. The patient is made to drink promptly a few ounces of brandy, whisky, or other spirit. Immediately after this a soft india-rubber tube is passed through the oesophagus and into the stomach. A funnel is attached to the upper end and about a pint of water (more or less, according to the circumstances) is poured into the stomach. The upper end of the tube is now depressed and the fluid is syphoned out. Washing the stomach is repeated two or three times, and finally 1 drm. Sodium Sulphate dissolved in a wineglassful of Water is given.—*Merck's Archives* (December '99); *L.* '00, i. 481; *T.G.* '01, 587; '01, 797; '02, 144; *P.J.* '00, i. 1; '02, ii. 85; *Squibb.* '01, 2563.

**Dose.**—1 to 3 grains = 0·06 to 0·2 gramme.

*Ph. Ger.* maximum single dose, 0·1 grammie; maximum daily dose, 0·3 grammie.

**Prescribing Notes.**—Usually given internally in the form of a pill. 12 grains of Carbolic Acid makes a good pill mass with 24 grains of Liquorice Powder; another good formula is, Carbolic Acid 12 grains, Liquorice Powder 18 grains, Compound Tragacanth Powder 6 grains. Used in various forms as an application.

Compressed Tablets are supplied for extemporaneously preparing a solution.

The addition of free Ammonia to solution of Carbolic Acid slowly turns the colour blue, which darkens on keeping.—*P.J.* (3) xxii. 593.

**Official Preparations.**—Acidum Carbolicum Liquefactum, Glycerinum Acidi Carbolici, Suppositorium Acidi Carbolici, Trochiscus Acidi Carbolici, Unguentum Acidi Carbolici. Used in the preparation of Salol, Sodii Sulphocarbolas and Zinci Sulphocarbolas. Contained in Injectio Ergotæ Hypodermica and Liquor Thyroidci.

**Not Official.**—Lotio Acidi Carbolici, Mistura Acidi Carbolici, Lunds Oil, Oleum Lubricans, Pastillus Acidi Carbolici, Trochisci Acidi Carbolici, Vapor Acidi Carbolici, Antiseptic dressings, Carbolic Soap, Solution de Phenate de Soude, Acidum Carbolicum Crudum, Phenosalyl, Phenol Camphor, Phenol Iodatum, Tribromphenol, Para-monochlorophenol, Trichlorphenol, Sulphaminol, Sulphocarbolic Acid and Sulpho-carbolates. See also Acidum Cresylicum.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital. (Fenolo cristallizzato), Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

**Antidotes.**—Stomach-tube, Emetics. Alcohol, Albumen, Saccharated Solution of Lime, soluble Sulphates (Magnesium

or Sodium); Olive or Castor Oil; stimulants to counteract narcotism; warmth to the extremities. Hypodermic injection of Atropine Sulphate  $\frac{1}{60}$  grain. Inhalations of Amyl Nitrite.

Case of Carbolic Acid poisoning by absorption treated successfully with 1-grain doses of Camphor dissolved in Syrup every hour for four hours.—*L.M.R.* '84, 217. 100 grammes of Camphorated Oil administered in case of Carbolic Acid poisoning: complete recovery.—*C.D.* '99, ii. 1055. Recovery after swallowing 3 oz. Carbolic Acid, treated by hypodermic injection of  $\frac{1}{10}$  grain Apomorphine, Olive Oil and Lime Water being given freely.—*B.M.J.* '88, i. 1336; Soap.—*L.* '89, ii. 445. Vinegar neutralises the effects of Carbolic Acid on the skin and mucous membrane, and is useful when Carbolic Acid has been swallowed.—*L.* '96, i. 255; *Pr.* lvii. 220; *B.M.J.* '97, ii. 595.

### **ACIDUM CARBOLICUM LIQUEFACTUM. LIQUEFIED PHENOL. LIQUEFIED CARBOLIC ACID.**

Phenol, 10; Distilled Water, 1: by weight.

**Dose.**—1 to 3 minims = 0·06 to 0·2 c.c.

Official in Austr., Ger., Hung. and Russ., Carbolic Acid, 100; Water, 10. Dan., Ital., Norw., Swed. and Swiss, Carbolic Acid, 90; Water, 10. Dutch, Carbolic Acid, 100; Water, 20.

A weak Solution of Carbolic Acid is official in the following Pharmacopœias.—Fr. (*Soluté d'Acide Phénique*), and Port. (*Aqua Phenica*), 1 in 100, also 1 in 1000; (*Aqua Carbolisata*), Austr., 1 in 33, Ger., 1 in 50; Hung. (*Aqua Carbolata*), Mex. (*Solucion de Acido Fenico*), and Swiss (*Aqua Phenolata*), 1 in 100; Dan. and Norw. (*Solutio Acidi Carbolici*) and Swed. (*Solutio Phenoli*), 1 in 50; Span. (*Aqua Fenicada*), 1 in 250.

### **GLYCERINUM ACIDI CARBOLICI. GLYCERIN OF PHENOL.**

Phenol, 1; Glycerin, sufficient to produce 5. (1 in 5)

Mixed with an equal bulk of Water, may be applied to the tonsils when turgid, or when there is a diseased state of mucous surface producing fetor of breath; also in diphtheria, assisted by a nutritious diet.

Official in U.S., 1 in 5; Port., 1 in 100; Span., 1 in 120.

### **SUPPOSITORIA ACIDI CARBOLICI. PHENOL SUPPOSITORIES.**

Each Suppository contains 1 grain of Phenol, 2 grains of White Beeswax, and about 12 grains of Oil of Theobroma.

The addition of Wax to Oil of Theobroma raises the melting point of the mass without producing the required firmness. Suggested that future B.P. basis should be Theobroma alone.—*P.J.* '00, ii. 85.

**TROCHISCUS ACIDI CARBOLICI.** PHENOL  
LOZENGE.

1 grain of Phenol in each, flavoured with Tolu.

**Dose.**—1 to 3 lozenges.

**UNGUENTUM ACIDI CARBOLICI.** PHENOL OINTMENT.  
OINTMENT OF CARBOLIC ACID.—*B.P.* '85.

Phenol, 1; Glycerin (by weight), 3; white Paraffin Ointment, 21. (1 in 25)

In *B.P.* '85 ointment, part of the Phenol crystallised on keeping, and acted as a caustic. To avoid this the Phenol is now dissolved in Glycerin.

Official in Ital., Carbolic Acid 1, Benzoated Lard 99; Mex., Carbolic Acid 10, Vaseline 90; U.S., Carbolic Acid 1, Ointment (made with 4 parts of Lard and 1 of Yellow Wax) 19.

**Not Official.**

**LOTIO ACIDI CARBOLICI.**—Carbolic Acid, 30 grains; Water, 8 oz. This lotion applied to mosquito bites relieves the itching, pain, and swelling. If mixed with a little Glycerin and sponged over the face and hands before retiring to rest, the mosquitoes will not bite until the Acid be thoroughly evaporated by the heat of the skin.—*L.* 78, ii. 280.

**MISTURA ACIDI CARBOLICI** (*Rothe*).—Pure Carbolic Acid, 12 minims; Tincture of Iodine, 16 minims; Tincture of Orange, 90 minims; Syrup, 3 drms.; Water to 8 oz. Recommended for use in typhoid fever; 1 oz. every four hours.—*L.* '88, i. 1244.

**LUND'S OIL.**—Phenol, 1; Castor Oil, 4; Almond Oil, 20.—*Lock.*

A solution of Carbolic Acid in Oil is frequently used to lubricate and at the same time disinfect catheters; but Koch's experiments show that such a solution has no antiseptic power, and they ought to be first disinfected with an aqueous solution, and afterwards oiled.—*Brunton.*

**OLEUM LUBRICANS.**—Cocaine, 25 grains; Oil of Eucalyptus, 10 minims; Castor Oil and Olive Oil, of each equal parts, to make 1 oz.—*St. George's.*

**PASTILLUS ACIDI CARBOLICI.**—Carbolic Acid,  $\frac{1}{2}$  grain; Glycogen, 18 grains in each.

**TROCHISCHI ACIDI CARBOLICI.**—About 1 grain Carbolic Acid in each lozenge. One for a dose four or five times daily as an antiseptic and stimulant.

**VAPOR ACIDI CARBOLICI.**—Pure Carbolic Acid, 420 grains; Water, 1 drm.; dissolve. 20 drops in a pint of Water at 140° F. for each inhalation. Antiseptic, very serviceable in syphilitic and carcinomatous ulcerations.

**CARBOLIC ANTISEPTIC DRESSINGS.**—Absorbent Wool and Lint containing 5 and 10 p.c. of Absolute Phenol; Gauze, 5 p.c.;

**Tow**, 5 p.c.; **Ligatures**; **Protective Oiled Skin**; **Silk Sutures**. Fr. Supp. Gaze Phéniquée, 10 p.c. Ital. has a Gauze, 5 p.c.; Wool, 2 p.c.

**CARBOLIC SOAPS**.—These are made to contain 10 p.c. and 20 p.c. of Phenol.

**SOLUTION DE PHENATE DE SOUDE** (*Fr.* and *Span.*).—Phenol, 70; Solution of Caustic Soda (sp. gr. 1.332), 100; Water to measure, 1000. All by weight.

One part of this solution to 30 of Water makes a good **antiseptic mouth-wash**.

The following formula is given (*A.J.P.* '90, 169) as representing the proprietary article sold under the name 'Phénol Sodaïque': Coal-tar, 2 troy oz.; Soda, 120 grains; Water sufficient to make 20 fl. oz.

**ACIDUM CARBOLICUM CRUDUM**.—A yellowish, yellowish-brown, or reddish-brown liquid, having a strongly empýreumatic and disagreeable odour. It consists chiefly of **Cresylic Acid** (*see* p. 26), and is largely used for disinfecting drains, etc.

Official in Belg., Dutch Supp., Hung., Ital., Jap., Mex., Russ., Swed. and U.S.

**PHENOSALYL**.—A speciality containing Phenol and Salicylic Acid, introduced as an antiseptic.

**PHENOL-CAMPHOR**.—Carbolic Acid and Camphor will form a liquid in any proportion between Camphor 3, Carbolic Acid 1—and Camphor 1, Carbolic Acid 3; but most authorities appear to use an excess of Camphor. The formula  $C_8H_{11}O$ , attributed to this compound, corresponds with molecular weights of each, Carbolic Acid and Camphor (Carbolic Acid 2 parts, and Camphor 3 parts).

A colourless refractive liquid with an odour of Camphor. Soluble in Alcohol (90 p.c.), Ether, Chloroform, and Oils. Insoluble in Glycerin and in Water.

Used as a local anæsthetic for toothache.—*T.G.* '85, 269; *L.* '89, ii. 867.

Camphor, 60; Phenol, 19; Water, 1; is not so caustic as Carbolic Acid.—*Pr.* xl. 128, and xlvi. 52.

**Acidum Carbolicum Camphoratum** (*Hager*).—Camphor, 3; Carbolic Acid, 1.

**Camphora Carbolisata** (*Hager*).—Camphor, 25; Carbolic Acid, 9; Spirit, 1.

Carbolic Acid 1, Camphor 3, has been applied in diphtheria, etc., either pure or mixed with an equal volume of Oil of Almonds.

Subcutaneous and intrapulmonary injections in phthisis.—*L.M.R.* '88, 518.

**PHENOL IODATUM** (Iodized Phenol).—Iodine, 40 grains; Liquefied Carbolic Acid, 1 oz.—*Hosp. Women and Samaritan*.

Applied on a dressed sound or forceps in chronic endometritis

and endocervicitis, with or without a previous curetting. A fl. dram. diluted with 20 oz. of Water is used as a vaginal douche in midwifery.—*L.* '88, ii. 862.

**Pigmentum Iodi Carbolicum.**—Iodine, 1; Liquefied Phenol 4.—*Guy's.*

**Pigmentum Iodi Carbolisati.**—Iodine, Potassium Iodide, and Phenol, of each 4 grains; Glycerin,  $\frac{1}{2}$  oz.; Water to 1 oz.—*Central Throat.*

**TRIBROMPHENOL** (Bromol).—White crystalline powder, with a slightly aromatic odour. A sample tested melted at 185° F. (85° C.).

**Solubility.**—1 in 2 of Alcohol (90 p.c.); 1 in 1 of Ether; 1 in 2 of Choloform; almost insoluble in Water, but dissolves in Caustic Alkaline Solutions; 1 in 260 of Glycerin; 1 in  $7\frac{1}{2}$  of Olive Oil.

It possesses considerable antiseptic properties.

**PARA-MONOCHLOROPHENOL.**—Occurs in crystalline needles. Soluble in Alcohol, Ether, and Fixed Oils, but practically insoluble in Water. It possesses a stronger microbicidal power than Phenol, but its employment requires careful watching.—*B.M.J.E.* '95, i. 11; *P.J.* '95, ii. 551; '98, i. 61; *C.D.* '95, i. 224.

5 or 10 p.c. glycerin solution in laryngeal phthisis, by intralaryngeal injection, also  $\frac{1}{4}$  to  $\frac{1}{2}$  p.c. solutions for inhalations. Under the name of **Menthosol**, a mixture of menthol and parachlorophenol in 5, 10 and 15 p.c. solutions has been introduced.—*B.M.J.E.* '02, i. 43.

**TRICHLORPHENOL.**—White crystalline powder, with a pungent, somewhat tarry odour.

**Solubility.**—1 in 1 of Alcohol (90 p.c.); 2 in 1 of Ether; 1 in  $1\frac{1}{4}$  of Chloroform; 1 in 1000 of Water; 1 in 9 of Glycerin; 1 in 3 of Olive Oil.

It forms salts with Ammonium, Potassium, Magnesium, Calcium and Lead.

It is stated to be an antiseptic and deodorant twenty-five times stronger than Carbolic Acid.

**SULPHAMINOL** (Thio-oxydiphenylamine).—Yellow, odourless, tasteless powder. Insoluble in Water, soluble in Alcohol and Ether. Antiseptic dusting powder. Internally in doses of 3 to 4 grains = 0.2 to 0.36 grammes, three or four times a day in cystitis.

**SULPHOCARBOLIC ACID** ( $H_3C_6H_5SO_4$ ).—Phenol-para-sulphonic Acid is formed by the action of Sulphuric Acid upon Carbolic Acid when warm. Phenol-ortho-sulphonic Acid is produced in the cold.

A few years ago it was revived under the name **ASEPTOL**, a syrupy liquid, mixing in all proportions with Water, Alcohol, and Glycerin.

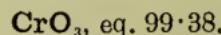
**AMMONIUM, MAGNESIUM, POTASSIUM, and SODIUM SULPHO-**

CARBOLATES all crystallise in tufts of acicular crystals more or less white; COPPER SULPHOCARBOLATE, in transparent light blue interlacing prisms; the IRON salt, in small brown micaceous crystals; the ZINC salt, in tabular crystals.

The Sodium and Zinc Sulphocarbolates are official. See SODII SULPHOCARBOLAS and ZINCI SULPHOCARBOLAS.

## ACIDUM CHROMICUM.

### CHROMIC ANHYDRIDE.



Small purplish-red crystals, which are slightly hygroscopic even when absolutely free from Sulphuric Acid, but much more so when a trace of the latter is present.

**Solubility.**—About 2 in 1 of Water; Alcohol decomposes it.

It is a powerful oxidising agent, and is liable to cause sudden combustion or *explosion* in contact with strong Alcohol, Ether, Glycerin, and some other organic matters.

**Medicinal Properties.**—Disinfectant, antiseptic, deodorant. It is a powerful caustic (1 in 1 of Water), and is used by means of a pointed glass rod, great care being taken to protect the adjacent parts by plaster or ointment, having moist lint ready to absorb any superfluous Acid; 100 grains to 1 oz. Water is used to remove warts, lupus, and condylomata; 1 in 40 of Water may be applied to ulcers of mouth or pharynx, and 1 in 2000, or even 4000, is used as a lotion for putrid sores, leucorrhœa and ozæna.

It is of great importance for its use as a caustic that Chromic Acid should be free from Sulphuric Acid.

A warm concentrated solution rapidly dissolves all animal tissues.

5 p.c. Solution of Chromic Acid applied with a brush to the feet after bathing gave excellent results in the German Army as a remedy for excessive perspiration.—*P.J.* (3) xx. 504.

The pure Acid fused on the point of a probe has been applied with success to nasal mucous membrane in cases of hay fever and paroxysmal sneezing.—*M.A.* '94, 317.

**Official Preparation.**—Liquor Acidi Chromici.

**Not Official.**—Gargarisma Acidi Chromici, Lotio Acidi Chromici and Pigmentum Acidi Chromici.

**Official in Austr., Belg., Dan., Dutch Supp., Fr., Ger., Hung., Ital., Jap., Mex. Norw., Port., Russ., Span., Swed., Swiss and U.S.**

**LIQUOR ACIDI CHROMICI.** SOLUTION OF CHROMIC ACID.

Chromic Anhydride, 1; Distilled Water, 3. (1 in 3½)  
Official in Belg., Fr., and Span., 1 in 2.

Not Official.

**GARGARISMA ACIDI CHROMICI.**—Chromic Acid, 1 grain; Water to 1 oz.—*Lock.*

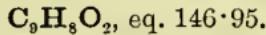
**LOTIO ACIDI CHROMICI.**—Chromic Anhydride, 10, 15 or 20 grains; Saccharin,  $\frac{1}{4}$  grain; Water, 1 oz.

**PIGMENTUM ACIDI CHROMICI.**—Chromic Acid, 10 grains; Water to 1 oz. In chronic superficial glossitis and secondary syphilis.—*Throat.*

**ACIDUM CHRYSOPHANICUM.** See CHRYSORBINUM.

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Not Official.

**ACIDUM CINNAMICUM.**

There are two varieties of Cinnamic Acid. (1) Medicinal; (2) Artificial.

**Medicinal Cinnamic Acid** is obtained from natural Cinnamic Acid derivates, e.g. Styrax, etc. Colourless, glistening crystals, having a faint, fragrant odour. Sparingly soluble in Water, soluble in Alcohol (90 p.c.), and in Ether. It is converted into Benzaldehyde on oxidation with Potassium Permanganate. Used in the form of intravenous or intra-muscular injection in pulmonary tuberculosis. In 5 p.c. alcoholic solution as an application in laryngeal tuberculosis.

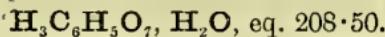
**Artificial Cinnamic Acid** is prepared synthetically by the interaction of Benzaldehyde and Acetylchloride. Colourless crystals, sometimes possessing a faint odour of Benzaldehyde. Sparingly soluble in Water, readily soluble in Ether and Alcohol. Its use is limited to the preservation of solutions, dressings, etc.

*See also Sodii Cinnamas.*

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**ACIDUM CITRICUM.**

CITRIC ACID.



Large colourless crystals, or a white crystalline powder. Obtained principally from Lemon Juice, which may contain from 5 to 8 p.c.

**Solubility.**—10 in 6 of Water, and measures 12½; 1 in 2 of Glycerin; 10 in 15 of Alcohol (90 p.c.); 1 in 8 of Ether; almost insoluble in Benzol and Chloroform.

The solubility of Citric Acid in Ether naturally varies with the amount of Alcohol and Water which the Ether contains. The above figure represents its solubility in Ether (sp. gr. 0·735). The figure for Ether Purus (sp. gr. 0·720) is 1 in 40.

**Medicinal Properties.**—Refrigerant and sialagogue; relieves thirst in fevers. Efficacious in scurvy, for which it is also prophylactic.

Citric Acid 1, dissolved in Distilled Water  $12\frac{1}{2}$  (or 35 grains in 1 oz.), is a substitute for Lemon Juice, but does not keep long without spoiling.

17 grains of Citric Acid neutralise about	$24\frac{1}{4}$	grains Potassium Bicarbonate.
	20	„ Potassium Carbonate.
	$20\frac{1}{2}$	„ Sodium Bicarbonate
	$34\frac{3}{4}$	„ Sodium Carbonate
	$12\frac{3}{4}$	„ Ammonium Carbonate.
	$11\frac{3}{4}$	„ Magnesium Carbonate.

**Dose.**—5 to 20 grains = 0·32 to 1·3 gramme.

**Prescribing Notes.**—Usually given in powders to be taken with each dose of an alkaline mixture during effervescence; or in solution, directing the quantity to be taken with the alkaline mixture.

**Incompatibles.**—Potassium Tartrate, alkaline Carbonates, Acetates, and Sulphides.

**Official Preparations.**—Used in the preparation of Liquor Ammonii Citratis, Liquor Bismuthi et Ammonii Citratis, Caffeinæ Citras, Ferri et Ammonii Citras, Ferri et Quininæ Citras, Lithii Citras, Potassii Citras, Sodii Citro-Tartras Effervescentes, and in all the granular effervescing Citrates.

**Not Official.**—Syrupus Acidi Citrici.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

**Not Official.**

**SYRUPUS ACIDI CITRICI.** *Syn.*—Syrupus Citri.

U.S.—Citric Acid, 10; Water, 10; Spirit of Lemon, 10; Syrup to make 1000.

**Not Official.**

### ACIDUM CRESYLICUM.

CRESYLIC ACID. CRESOL.

$\text{C}_7\text{H}_6\text{O}$ , eq. 107·25.

A colourless or slightly yellow liquid, with a tarry odour.

**Solubility.**—1 in 80 of Water, and mixes in all proportions with Alcohol (90 p.c.), Ether, Chloroform, Glycerin, and Olive Oil.

**Medicinal Properties.**—Disinfectant and antiseptic. Used as an inhalation in whooping-cough.

**Prescribing Notes.**—*It is far less soluble in Water than Carbolic Acid, and therefore not so convenient.*

**Official** in Ger., Cresolum crudum, a yellowish liquid; Austr. Add. Kresolum, colourless crystals which become yellow or brown on keeping, soluble in 38 parts of Water. Austr. Add. has also Kresolum Liquifactum (Kresol, 100, Water, 10), and Aqua Kresolica (1 of liquefied Kresol in 50).

**LIQUOR CRESOLI SAPONATUS** (Ger. and Swed.).—Crude Cresol, 1; Sapo Kalinus, 1; warm and mix to form a yellowish-brown fluid.

**AQUA CRESOLICA** (Ger.).—Cresol Soap solution, 1; Distilled Water, 9.

There are three isomeric Cresols, but the principal constituent of the ‘crude Carbolic Acid’ of Commerce (the source of commercial Cresylic Acid) is the Para-Cresylic Acid, with more or less of its isomers.—*Allen.*

A mixture of the three was introduced as an antiseptic under the name of **Trikresol**.

By the same process which yields Salicylic Acid from Phenol, the three isomeric Cresols yield three corresponding Cresotic or Cresotinic Acids, the Sodium salts of which have been used in Medicine. *See also Acidum Salicylicum.*

The following is understood to be the composition of the various proprietary preparations:—

**JEYES' FLUID.**—A preparation of Tar Oil containing 20 p.c. Tricresol saponified with resin and alkali. It forms a permanent emulsion with Water.

Used in 1 or 2 p.c. solution, and for the same purposes as Carbolised Solutions. An injection of 1 in 400 is excellent in gonorrhœa and ozæna, as ointment in erysipelas, and in obstetric practice on account of its haemostatic as well as its antiseptic properties.

**JEYES' CYLLIN** (medical).—A non-toxic antiseptic. Contains 50 p.c. of a new series of Oxidised Hydrocarbons, free from Phenol and its homologues, emulsified with neutral Tar Oil. Its Carbolic Acid Co-efficient for *B. Typhosus* is 16·0.—*Public Health*, Dec. 1903; also *Journal State Medicine*, Jan. 1904.

**PEARSON'S ANTISEPTIC** is a similar preparation to Jeyses' Fluid. The Carbolic Acid Co-efficient for *B. Typhosus* is 2·6.—*Public Health*, Dec. 1903.

**ARTMANN'S CREOLIN.**—A solution of tar hydrocarbons in Sulpho-cresylic Acid. It forms a turbid liquid with Water.

Creolin is **Official** in Dutch Supp.

**IZAL.**—A distilled product from coke, introduced as a non-poisonous disinfectant, and sold in three forms: (1) medical Izal; (2) an emulsion containing 40 p.c. of the refined oil; (3) ordinary Izal, an emulsion containing 40 p.c. of unrefined oil.

Izal in the treatment of phthisis, 10 minims = 0·6 c.c., mixed with cod-liver oil given internally, and as an inhalation by evaporation at the bedside, and as a solution in paroleine used as a spray.—*L.* '02, i. 146.

Intra-tracheal injection of Izal Oil in phthisis, 60 minims of a 10 p.c. solution of Izal Oil in Glycerin.—*B.M.J.* '02, i. 479; *Trans. Brit. Cong. Tub.*, iii. 413; also Izal, 20 minims in Glycerin, 1 oz.; with occasionally 10 minims Guaiacol added.—*B.M.J.* '03, i. 545.

**Izal Oil** as an intestinal disinfectant, given in doses of 1 to 3 capsules containing 2 minims = 0·12 c.c. of Izal Oil in each.

**EUROPHEN** (Di-isobutyl-orthocresol Iodide).—A fine light, brownish-yellow, amorphous powder, having an aromatic saffron-like odour. Introduced as a substitute for Iodoform. Insoluble in Water or Glycerin; freely soluble in Absolute Alcohol, Chloroform or Ether. Applied as a dusting Powder, or 10 p.c. Ointment.

**Official in Dutch Supp.**

**Losophan** (Tri-iodometacresol), a white or yellowish-white powder, insoluble in Water, soluble 1 in 7 of Alcohol (90 p.c.); 1 in 4 of Ether; 1 in 6 of Chloroform; and **Traumatol** (Iodocresol), are compounds of Cresol and Iodine, introduced into medicine chiefly as substitutes for Iodoform.

**LYSOL**.—Sp. gr. 1·047. A transparent brown syrupy liquid, which forms a clear solution with Water. It is a solution in neutral Soap, of Tar Oils which distil between 187° and 200° C., and are present to the extent of about 47 p.c.

**Official in Dutch Supp. and Russ. Ph.**

Injection of 9 to 12 c.c. of a 1 p.c. solution of Lysol into the spinal canal in cerebro-spinal meningitis.—*L.* '02, ii. 1188.

**SAPROL**.—Tar Oils dissolved in large excess of Hydrocarbons. Inflammable.

**SOLUTOL**.—Sodium Cresylate in excess of Cresol, powerfully disinfectant, but caustic, and not intended for surgical purposes.

**SOLVEOL**.—Cresols in Sodium Cresotate, soluble in Water. Non-caustic, and used for surgical purposes.

**CRESOTINIC ACID**.—There are three varieties of Cresotinic Acid, the ortho-, meta-, and para-cresotinic acid. The only one of these which has received attention as a medicinal agent is the para-cresotinic acid.

**PARA-CRESOTINIC ACID** occurs in long white needles or in rhombic prisms. Antiseptic, antirheumatic and antipyretic.

**SODIUM PARACRESOTINATE**.—The sodium salt of paracresotinic acid. A white crystalline powder. Employed in doses and for purposes similar to Sodium Salicylate.

A Calcium Cresotinate is also known as a disinfectant.

## ACIDUM GALLICUM.

GALLIC ACID.

$\text{H}_3\text{C}_7\text{H}_3\text{O}_5$ ,  $\text{H}_2\text{O}$ , eq. 186·65.

White or light brownish-yellow crystalline needles or prisms; odourless, and possessing an astringent taste.

**Solubility.**—1 in 100 of cold Water; 1 in 3 of boiling Water; 1 in 8 of Alcohol (90 p.c.); 1 in 50 of Ether; 1 in 6 of Glycerin with heat. Gallic Acid 1, and Potassium Citrate 1, will dissolve in 30 of Water.

**Medicinal Properties.**—It was at one time used as a local astringent, but it is far inferior to Tannic Acid for this purpose. As Tannic Acid is converted into Gallic Acid in passing through the circulation, the latter has been given for the purpose of arresting haemorrhage in remote vessels, but is now generally believed to be useless in such cases.

Useless for pulmonary or renal haemorrhage.—*B.M.J.* '00, ii. 1070.

**Dose.**—5 to 15 grains = 0·32 to 1 grammie.

**Prescribing Notes.**—With twice its weight of Sugar, may be taken three times a day in Water, in powders or in cachets. It is also given in pills: 30 grains of Acid and 3 minims of Glycerin will make 6 pills.

**Incompatibles.**—Spiritus Ätheris Nitrosi, metallic salts.

**Not Official.**—Gallanol, Galloformin, Gallobromol.

**Official in** Belg., Dan., Dutch Supp., Fr., Ital., Mex., Port., Span. (Acido Agallico), Swiss and U.S.

### Not Official.

**GALLANOL** (Gallic Acid Anilide).—Colourless crystals, melting at 205° C. Insoluble in Water. Introduced as a substitute for Chrysophanic Acid in psoriasis.—*B.M.J.E.* '93, ii. 99; '94, i. 12; ii. 44. In eczema.—*M.A.* '95, 226.

**GALLOFORMIN.**—A compound of Gallic Acid with Hexamethylenetetramine. Glistening needles, almost insoluble in cold Water. Used externally and internally as a disinfectant.—*P.J.* '99, ii. 135.

**GALLOBROMOL** (*Dibromogallic Acid*).—Colourless needles or prisms, or as a white crystalline powder. Soluble 1 in about 8 of Water, readily soluble in Alcohol and Ether. Used internally as a substitute for the Alkaline Bromides in daily doses of 2 to 3 grammes (30 to 45 grains). Also in the form of a 1 to 2 p.c. solution as an injection in gonorrhœa. Under the name of **Gallogen**, Ellagic Acid the astringent principle of Divi-divi has been introduced as a medical astringent.

**Dose.**—8 to 16 grains = 0·52 to 1 grammie, three times a day.

Not Official.

### ACIDUM GLYCEROPHOSPHORICUM.

*See CALCII GLYCEROPHOSPHAS.*

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Not Official.

### ACIDUM HYDRIODICUM.

This Acid is best prepared and kept in the form of a 20 p.c. solution (sp. gr. 1·17).

Though colourless when first made, rapidly decomposes, even in diffused light, with liberation of Iodine, but may be readily decolorised by warming with a small proportion of Hypophosphorous Acid; 60 minims to 4 oz. is usually sufficient even for a highly coloured Acid.

**SYRUPUS ACIDI HYDRIODICI.**—Colourless Hydriodic Acid (20 p.c.),  $3\frac{1}{2}$  oz.; Distilled Water, 8 oz.; Simple Syrup, sufficient to make up the measure to 80 oz.

An acid syrupy liquid, colourless, or of a pale straw tint. Sp. gr. 1·300. Contains 1 p.c. of absolute Hydriodic Acid, HI.

Dose.—20 to 40 minims = 1·2 to 2·4 c.c., well diluted.

Official in U.S.

**Syrupus Acidi Hydriodici (B.P.C.)** contains about 1 p.c. of Hydriodic Acid. Dose, 20 to 60 minims = 1·2 to 3·6 c.c., well diluted.

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### ACIDUM HYDROBROMICUM DILUTUM.

#### DILUTED HYDROBROMIC ACID.

A colourless liquid, sp. gr. 1·077, containing 10 p.c. by weight of Hydrogen Bromide, HBr, eq. 80·35.

**Medicinal Properties.**—Sedative and hypnotic, but not so reliable as the Bromides, though producing less depression. When a large dose or continued use is indicated, the acid can be used to supplement or replace the Bromides. It is stated to be less likely to produce acne.

Dr. Fothergill stated that it prevents headache after taking Quinine and Iron, and may be given with Quinine (which it readily dissolves) for nervous exhaustion.

It is said to prevent the after-effects of Morphine if given with that drug.

Dose.—15 to 60 minims = 0·9 to 3·6 c.c.

**Prescribing Notes.**—*Larger doses may be given, 2 to 4 fl. drm., well diluted with water, or syrup and water.*

*60 minims = 8 $\frac{2}{3}$  grains of Potassium Bromide in the quantity of Bromine.*

Official in Dutch Supp., Fr., Swiss and U.S., 10 p.c.; Ger. 25 p.c.

**ACIDUM HYDROCHLORICUM.****HYDROCHLORIC ACID.**

A colourless fuming liquid, sp. gr. 1·160, containing 31·79 p.c. by weight of Hydrogen Chloride **HCl**, eq. 36·19.

**Medicinal Properties.**—A powerful escharotic. When diluted it is given internally, *see Acidum Hydrochloricum Dilutum.*

Treatment of ulceration of the cesophagus and stomach due to swallowing strong Hydrochloric Acid.—*B.M.J.* '01, ii. 1468; '02, i. 511.

**Incompatibles.**—Salts of Silver and Lead, Tartar Emetic, Alkalies and their Carbonates.

**Official Preparations.**—*Acidum Hydrochloricum Dilutum.* Used in the preparation of *Acidum Nitro-hydrochloricum Dilutum*, *Apomorphinae Hydrochloridum*, *Cocaina Hydrochloridum*, *Glycerinum Pepsinæ*, *Liquor Arsenici Hydrochloricus*, *Liquor Ferri Perchloridi Fortis*, *Liquor Zinci Chloridi*, and *Podophylli Resina*.

**Antidotes.**—In cases of poisoning by Hydrochloric Acid, the antidotes are Chalk, Magnesia, Potassium Bicarbonate, with White of Egg, Carron Oil, or Soap-suds; followed by Enemata of Beef Tea and Brandy, with Tincture of Opium to prevent collapse; and emollient drinks.

**Official in Austr.** 23·86 p.c.; **Belg.**, Port. and Span., sp. gr. 1·180; **Fr.**, 34·4 p.c.; **Jap.**, 30 p.c.; **Mex.**, sp. gr. 1·17; **Dan.**, **Dutch**, **Ger.**, **Hung.**, **Norw.**, **Russ.**, **Swed.** and **Swiss.**, 25 p.c.; **Ital.**, 35·39 p.c.; **U.S.**, 31·9 p.c. An **Acidum Hydrochloricum Crudum** is included in the **Dan.**, **Ital.**, **Russ.** and **Swed.**

The Crude Acid made with Pyrites Vitriol is generally yellow, and contains considerable traces of Iron and Arsenic.

**ACIDUM HYDROCHLORICUM DILUTUM. DILUTED HYDROCHLORIC ACID.**

Dilute 6 of Hydrochloric Acid with Distilled Water to make 20.

Sp. gr. 1·052. Contains 10·58 p.c. by weight of **HCl**.

Three and a third minims contain about 1 minim strong Acid.

**Medicinal Properties.**—Stimulant, sialagogue, tonic, cholagogue. Externally and diluted it is refrigerant. Given after meals in dyspepsia, thus increasing the acidity of the gastric juice and thereby aiding digestion; given internally also to diminish night sweating; if given before meals it checks excessive secretion of acid, and promotes appetite. As a gargle in ulcerated throat.

10 to 20 drops of a 38 p.c. solution of pure Hydrochloric Acid

in a little simple Syrup at the beginning of a meal in the treatment of chronic diarrhoea.—*B.M.J.E.* '02, ii. 7.

**Dose.**—5 to 20 minims = 0·3 to 1·2 c.c.

**Prescribing Notes.**—Usually given with aromatic or bitter infusions; for children,  $1\frac{1}{2}$  to 2 minims; 1 drm. in 8 oz. of Infusion of Roses or Decoction of Cinchona as a gargle for ulcerated sore throat.

**Official Preparations.**—Used in the preparation of Extractum Ergotæ, Injectio Apomorphinæ Hypodermica, Liquor Morphinæ Hydrochloridi and Liquor Strychninæ Hydrochloridi.

**Official in Austr. and Dutch,** 12·4 p.c.; **Belg., sp. gr.** 1·040; **Dan., Hung., Swiss and U.S.,** 10 p.c.; **Jap.,** 10 p.c.; **Norw. and Swed.,** 10., p.c.; **Ger.,** 12·5 p.c.; **Ital.,** 8·07 p.c.; **Russ.,** 8·2 p.c.; **Mex., Acid 1,** Water 3.

## ACIDUM HYDROCYANICUM DILUTUM.

### DILUTED HYDROCYANIC ACID.

A colourless liquid containing 2 p.c. by weight of Hydrogen Cyanide, **HCN**, eq. 26·85.

**Medicinal Properties.**—As this Acid is a dangerous poison, it should never be prescribed undiluted. Moreover, a diluted solution retains its strength better than a strong one.

It is sedative, antispasmodic, allays vomiting, is useful in *gastrodynia*, in visceral neuralgias, in dyspeptic palpitations, but chiefly valuable in the dry resultless cough of asthma, phthisis and whooping-cough, and prevents the vomiting brought on by food in phthisis. Used externally to allay itching in urticaria, lichen, etc., if the skin be unbroken; as a lotion 2 drm. to 8 oz. of Rose Water and Glycerin; as an ointment from  $\frac{1}{2}$  drm. to 1 drm. to each oz. of Zinc Ointment.

The vapour is sometimes applied to the eye, but it is more generally used as a sedative inhalation in the cough of laryngeal phthisis and in some spasmodic affections.

**Dose.**—2 to 6 minims = 0·12 to 0·36 c.c.

**Prescribing Notes.**—Given in Almond Emulsion for cough; and with Sodium Bicarbonate, Bismuth Carbonate and Peppermint Water, for dyspepsia.

As the Acid is susceptible to the action of light and air, and is very volatile, it is the practice to keep it in amber-coloured bottles, stopper downwards.

**Incompatibles.**—Silver, Copper, and Iron salts, and Mercuric Oxide.

**Official Preparations.**—Used in the preparation of *Tinctura Chloroformi et Morphinæ Composita*.

**Not Official.**—Acidum Hydrocyanicum (*Scheele*).

**Antidotes.**—In cases of poisoning, the antidotes are fresh air and artificial respiration, with cold affusion; the recent precipitate obtained by swallowing 10 grains of Ferrous Sulphate, with a fl. dram. of Tincture of Ferric Chloride in 1 oz. of Water, followed by 20 grains of Potassium Carbonate dissolved in 1 oz. of Water; this will render insoluble 110 minims of B.P. Acid. Stimulants, Ammonia and Brandy; Hypodermic injection of Atropine,  $\frac{1}{60}$  grain.

Suggested that in mines and places where cyanide is used the following antidote should be kept ready: (1) 1 oz. of a 23 p.c. solution of Ferrous Sulphate; (2) 1 oz. of a 5 p.c. solution of Potassium Hydrate; (3) 30 grains of powdered Magnesium Oxide to be added to the above in half a pint of Water.—*L. '01, ii. 497.*

Injection of a 3 p.c. solution of Hydrogen Peroxide subcutaneously recommended in cases of poisoning by fumes of Hydrocyanic Acid—*J.C.S. '01, Abs. ii. 535.*

**Official** in Belg., 2·5 p.c.; Dutch Supp., 2 p.c.; Fr., Acide Cyanihydrique Dissous, 1 p.c.; Norw., 2 p.c.; Port., strength not given; Mex., Acido Cianhidrico Medicinal; U.S., 2 p.c.; Span., 10 p.c. See also Aqua Amygdalæ Amaræ.

#### Not Official.

**ACIDUM HYDROCYANICUM (SCHEELE) B.P.C.**—A colourless liquid. Sp. gr. 0·994. It should contain 4 p.c. HCN, when estimated by volumetric solution of Silver Nitrate; should give no precipitate with Barium Chloride, but with Silver Nitrate a white precipitate entirely soluble in boiling concentrated Nitric Acid.

**Dose.**—1 to 4 minims = 0·06 to 0·24 c.c.

It is known that the weaker strengths of Hydrocyanic Acid keep better than the stronger, and the only practical use for a double strength acid is to poison dogs or cats.

#### Not Official.

#### ACIDUM HYDROFLUORICUM.

A colourless liquid, usually redistilled, containing about 30 p.c. of the gas; it is usually stored in gutta-percha bottles, owing to its action on glass.

It is strongly corrosive. Great caution must be used in handling this Acid, as contact with the liquid or gas may result in sores difficult to heal, or permanent destruction of tissue; no pain is felt until the injury is beyond remedy. It also gives off a pungent irritating vapour.

**ACIDUM HYDROFLUORICUM DILUTUM (B.P.C.).**—Dilute the 30 p.c. acid so as to contain 0·2 p.c., and preserve in gutta-percha bottles.

**Dose.**—5 to 20 minims = 0·3 to 1·3 c.c.

**AMMONII FLUORIDUM.**—Colourless crystals soluble in Water. Given in hypertrophy of the spleen and in goitre as a  $\frac{3}{4}$  p.c. solution, in doses of 5 to 20 minims = 0·3 to 1·3 c.c.

**FERRI FLUORIDUM.**—A mixture of Ferric and Ferrous Fluoride. A purplish-grey powder, insoluble in Water.

Under the proprietary titles of *Antitussin* and *Fluorrheumin*, bodies containing Fluorine have been introduced; the former as an application in whooping-cough, the latter for rheumatism.—*P.J.* '99, ii. 11; '00, ii. 775.

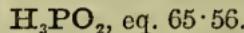
Fluoroform ( $\text{CHF}_3$ ) and **Aqua Fluoroformi** (which is a saturated solution of Fluoroform in distilled Water) have also received notice.

Sodium Fluoride has been introduced in the treatment of tuberculosis and stated to possess distinct antiseptic properties. Toxic effects of same.—*P.J.* '99, ii. 235. The Fluorides have been used as preservatives of foods.

Solutions of Sodium Silicofluoride and the **Saluferbath**, which is a mixture of various silicofluorides, have been introduced as antiseptics.—*B.M.J.E.* '03, i. 712.

#### Not Official.

### **ACIDUM HYPOPHOSPHOROSUM.**



A colourless liquid, containing 30 p.c. of Hypophosphorous Acid. Sp. gr. 1·1367. A process is given in *B.P.C.*

**Dose.**—2 to 5 minims, 0·12 to 0·3 c.c.

A good preservative for preparations otherwise liable to change by oxidation.

Used principally in the manufacture of the Solution and Syrup of Iron Hypophosphite, etc.

### **ACIDUM LACTICUM.**

#### LACTIC ACID.

A colourless and odourless syrupy liquid, sp. gr. 1·210, somewhat hygroscopic, containing 75 p.c. of Hydrogen Lactate,  $\text{HC}_3\text{H}_5\text{O}_3$ , eq. 89·37.

**Solubility.**—It is miscible in all proportions with Water, Alcohol (90 p.c.), and Ether. It dissolves, but is not dissolved by, Chloroform.

**Medicinal Properties.**—It is used as a ‘swab’ in diphtheria; a solution (50 to 75 p.c.) has been used successfully for pharyngeal and laryngeal tubercle, and for lupus after scraping.

50 p.c. solution applied to corneal ulcers.—*L.* '95, i. 1452.

**Official Preparation.**—Syrpus Calcii Lactophosphatis.

Official in Belg., Fr., Port. and Span., sp. gr. 1·215; Austr., Dan., Dutch Supp., Ger., Ital., Norw., Russ., Swed. and Swiss, sp. gr. 1·21 to 1·22; U.S. sp. gr. 1·213; Mex., sp. gr. 1·315.

**SYRUPUS CALCII LACTOPHOSPHATIS.** SYRUP OF CALCIUM LACTOPHOSPHATE.

Precipitated Calcium Carbonate,  $2\frac{1}{2}$  oz.; Concentrated Phosphoric Acid, 4 oz. and 262 minims; Lactic Acid, 6 fl. oz.; Refined Sugar, 70 oz.; Orange-flower Water of Commerce, undiluted,  $2\frac{1}{2}$  fl. oz.; Distilled Water, *q.s.* to form 100.

**Dose.**—30 to 60 minims = 1·8 to 3·6 c.c.

This formula closely resembles that given in U.S.P. 1894.

The occasional change of colour in this syrup is stated to be due to inversion of the sugar by the acid.—*P.J.* '99, ii. 221; *A.J.P.* '98, 589.

Official in Dutch Supp., 3 p.c. Calcium Lactophosphate. Fr. Codex, 1·25 p.c. by weight of Bi-Calcic Phosphate. U.S., about 2·5 grammes of Tri-Calcic Phosphate in 100 c.c. of the Syrup.

Not Official.

**CALCII LACTAS** (*Codex*).—White, mamillated tufts; or as a white odourless powder. Soluble 1 in 10 of Water, but solubility varies with the age of the preparation. Insoluble in Ether. Given in rachitis and scrofula.

**Dose.**—3 to 6 grains = 0·2 to 0·4 gramme. Also combined with Ferri Laetas.

**FERRI LACTAS.**—Pale greenish-white crusts consisting of small needle-shaped crystals, or as a crystalline powder. Odourless when quite pure, but usually possessing a mild peculiar odour and sweet ferruginous taste. Soluble 1 in 40 of cold Water, 1 in 12 of hot Water. It should be kept in well stoppered bottles as it tends to oxidise on exposure to air.

**Dose.**—5 to 15 grains = 0·32 to 1 gramme. In the form of a cachet or as a syrup.

Official in all the Foreign Pharmacopœias.

Other Not Official salts of Lactic Acid are:—**Plumbi Lactas**, a heavy white crystalline powder, soluble in Water. **Sodium Lactate**, a colourless or light yellow liquid of a syrupy consistency, and mild salty taste; readily soluble in Water; commercial samples frequently contain an undesirable excess of alkali in the form of Sodium Carbonate. **Zinc Lactate**, a white crystalline powder, or in glistening needle-shaped crystals; soluble in Water. Official in Fr. Codex; it has been used internally, in doses of 1 to 3 grains = 0·06 to 0·2 gramme, four or five times a day, in the treatment of epilepsy.

**Bismuth Lactate** is Official in Dutch Supp.

**SYRUPUS CALCII LACTOPHOSPHATIS CUM FERRO (U.S.N.F.)—**  
Each fl. dram. contains  $\frac{1}{2}$  grain Iron Lactate, and about  $\frac{1}{4}$  grain of Calcium Lactate.

## ACIDUM NITRICUM.

### NITRIC ACID.

A colourless fuming liquid, sp. gr. 1·42, containing 70 p.c. by weight of Hydrogen Nitrate,  $\text{HNO}_3$ , eq. 62·58.

**Medicinal Properties.**—It is strongly corrosive, and is applied as a caustic to warts, phagedænic sores and chancres, fissured anus and condylomata, by means of a pointed glass rod. When diluted it is refrigerant, a stomachic tonic and cholagogue, and if very much diluted forms a drink in febrile diseases, and is used also as an injection to dissolve phosphatic calculi when of small size.

An acid of greater strength, “Fuming Nitric Acid” (sp. gr. 1·5) is sometimes employed as a caustic.

**Incompatibles.**—Alcohol, Alkalies, Carbonates and Sulphides, Ferrous Sulphate, Lead Acetate.

**Official Preparations.**—Acidum Nitricum Dilutum, and Acidum Nitro-hydrochloricum Dilutum. Used in the preparation of Acidum Phosphoricum Concentratum, Argenti Nitras, Liquor Ferri Perchloridi Fortis, Liquor Ferri Pernitratatis, Liquor Ferri Persulphatis, Liquor Hydrargyri Nitratatis Acidus, Spiritus Ætheris Nitrosi, Unguentum Hydrargyri Nitratatis.

**Antidotes.**—In case of poisoning by Nitric Acid, the antidotes are Chalk, Magnesia, or Carbonated Alkalies, with White of Egg, Carron Oil, or Soap-suds; followed by Enemata of Beef Tea and Brandy, with Tincture of Opium to prevent collapse; emollient drinks.

**Official in Austr.,** sp. gr. 1·300; **Belg.,** sp. gr. 1·330; **Dan. and Norw.,** sp. gr. 1·180; **Dutch and Jap.,** sp. gr. 1·317; **Fr.,** sp. gr. 1·390; **Ger., Swed. and Swiss,** sp. gr. 1·153; **Hung.,** sp. gr. 1·310; **Ital.,** sp. gr. 1·400; **Mex.,** sp. gr. 1·42; **Port.,** sp. gr. 1·300 to 1·330; **Russ.** sp. gr. 1·200; **Span.,** sp. gr. 1·321; **Swiss,** also Acidum Nitricum Fumans, sp. gr. 1·45 to 1·5; **U.S.,** sp. gr. 1·414. **Dan., Ger. and Norw.,** also Acidum Nitrico-nitrosum, sp. gr. 1·48 to 1·50.

Ger., Russ. and Swed. include an Acidum Nitricum Crudum.

## ACIDUM NITRICUM DILUTUM. DILUTED NITRIC ACID.

Dilute 3 fl. oz. and 7 fl. dram. of Nitric Acid with Distilled Water to make 20 fl. oz.

Sp. gr. 1·101. Contains 17·44 p.c. by weight of  $\text{HNO}_3$ .

**Dose.**—5 to 20 minims = 0·3 to 1·2 c.c.

5 minims contain about 1 minim of strong Acid.

**Prescribing Notes.**—Usually diluted with Water or with bitter infusions and Tincture of Orange.

Official in Austr., sp. gr. 1·129; Belg. and Dutch, sp. gr. 1·12; Hung., sp. gr. 1·067; Ital., sp. gr. 1·1; Russ., sp. gr. 1·096; Swiss, sp. gr. 1·056; U.S., sp. gr. 1·057; Jap., sp. gr. 1·059. Dan., Norw. and Swed., see Acidum Nitricum.

### ACIDUM NITRO-HYDROCHLORICUM DILUTUM. DILUTED NITRO-HYDROCHLORIC ACID.

Nitric Acid, 3; Hydrochloric Acid, 4; Distilled Water, 25.

B.P. directs the Acids to be mixed with the Water and kept for 14 days before use; but scarcely any action takes place between the diluted Acids, free Chlorine and Nitrous Acid existing only in *traces*.

When the strong Acids were mixed, and after 3 days were diluted, the resulting fluid liberated about fifty times as much Iodine from Potassium Iodide as the B.P. preparation.

**Medicinal Properties.**—Cholagogue and gastric tonic. Externally as a lotion or bath, as well as by stomach administration for tropical enlargement and chronic congestion of the liver. Internally also in biliaryness, in oxaluria, and in torpid conditions of stomach, intestinal glands and liver; and in catarrhal jaundice.

**Dose.**—5 to 20 minims = 0·3 to 1·2 c.c.

**Prescribing Notes.**—Usually diluted with Water and given with Tincture of Gentian or Tincture of Orange.

16 minims equal 1½ minim of Nitric Acid and 2 minims of Hydrochloric Acid.

**Incompatibles.**—Alkalies, Carbonates, Sulphides, salts of Silver and Lead.

**Antidotes.**—See Acidum Nitricum.

Official in U.S., undiluted—Nitric Acid, 18; Hydrochloric Acid, 82; also the diluted—Nitric Acid, 4; Hydrochloric Acid, 18; Water, 78.

Swiss, Nitric Acid, 1; Hydrochloric Acid, 3. By weight.

Dutch Supp., Nitric Acid, 3, Hydrochloric Acid, 7.

Fr., Eau Régale—Nitric Acid, 8; Water, 2; Hydrochloric Acid, 30. By weight.

Norw., Nitric Acid, 1; Hydrochloric Acid, 2. By weight.

Dublin Pharmacopœia was—Nitric Acid, 1; Muriatic Acid, 2.

### ACIDUM OLEICUM.

#### OLEIC ACID.

A pale brownish-yellow oily liquid, which has a tendency to become rancid and to darken in colour on exposure to light

and air. Pure Oleic Acid is represented by the formula  $\text{HC}_{18}\text{H}_{33}\text{O}_2$ , eq. 280·14, but the commercial article is usually not quite pure.

**Solubility.**—Mixes in all proportions with Alcohol, Chloroform, Ether, Benzol, Oil of Turpentine, and fixed Oils. Insoluble in Water.

**Medicinal Properties.**—Used in pharmacy for dissolving various metallic oxides and the alkaloids Morphine, Aconitine, Atropine, Cocaine, and Veratrine; the oleates thus formed are more readily absorbed than ointments made with fats, oils, or paraffins.

**Official Preparation.**—*Hydrargyri Oleas.* Used in the preparation of *Unguentum Aconitinæ*, *Unguentum Atropinæ*, *Unguentum Cocainæ*, and *Unguentum Veratrinæ*. Of *Mercuric Oleate*, *Unguentum Hydrargyri Oleatis*.

**Official in Mex. (Acido Oleico); U.S., Dan. and Dutch Supp.** include an *Acidum Olcinicum Crudum*, “Elainum.”

### Not Official.

#### ACIDUM OSMICUM.

OSMIC ACID.



A pale yellow crystalline substance giving off an excessively irritating vapour, which attacks the eyes and nostrils. It is more convenient in the form of 1 p.c. aqueous solution, which must be carefully protected from dust or other organic matter which will reduce it and form a black deposit.

**Solubility.**—1 in 17 Water. Should not be dissolved in Alcohol or Ether, as decomposition ensues.

**Medicinal Properties.**—4 to 10 minims of a 1 p.c. aqueous solution of Osmic Acid or Potassium Osmate have been injected hypodermically for sciatica and other forms of neuralgia.

5 to 10 minims in two or three separate injections in the treatment of certain forms of neuralgia.—*L.* '99, ii. 1250; '03 ii. 970.

Used as 1 p.c. aqueous solution for fixing and staining in histological work. Fat and nerve substances are blackened by it.

**Official in Dutch Supp.**

### Not Official.

#### ACIDUM OXALICUM.

$\text{H}_2\text{C}_2\text{O}_4$ ,  $2\text{H}_2\text{O}$ , eq. 125·10.

This is noticed here rather as a poison than a medicine, although it has been used medicinally in America in the treat-

ment of amenorrhœa, and as a sedative in acute cystitis (*T.G.* '91, 164) in  $\frac{1}{2}$ -grain doses every four hours. It is used in households for cleaning brass, and removing ink-stains, iron-moulds, etc. It has been mistaken for Epsom Salts, which it somewhat resembles. Murrell states that death has occurred from 2 drms., but recovery from  $\frac{1}{2}$  oz.

**Antidotes.**—Chalk, Lime, or Whitening are given freely in Water. Saccharated Solution of Lime may be given in drm. doses, frequently repeated; also emollient and stimulant drinks.

## ACIDUM PHOSPHORICUM CONCENTRATUM.

### CONCENTRATED PHOSPHORIC ACID.

A colourless liquid, sp. gr. 1.5, containing 66.3 p.c. of Hydrogen Orthophosphate,  $H_3PO_4$ , eq. 97.32.

**Medicinal Properties.**—This concentrated acid is used in making phosphatic preparations. Only given internally in the diluted form. *See Acidum Phosphoricum Dilutum.*

**Official Preparations.**—Acidum Phosphoricum Dilutum. Used in the preparation of Acidum Hydrobromicum Dilutum, Ammonii Phosphas, Syrupus Calcii Lactophosphatis, Syrupus Ferri Phosphatis, and Syrupus Ferri Phosphatis cum Quinina et Strychnina.

**Official in Austr.**, 16.66 p.c.; **Belg.**, Fr. and Ital., 50 p.c.; Dutch, Ger. and Russ., 25 p.c.; Jap. and Hung., 20 p.c.; Mex., sp. gr. 1.34; Port., sp. gr. 1.880; Span., sp. gr. 1.454; U.S., 85 p.c.

### ACIDUM PHOSPHORICUM DILUTUM. DILUTED PHOSPHORIC ACID.

Dilute 3 of Concentrated Phosphoric Acid with Distilled Water to make 20. Sp. gr. 1.08. Contains 13.8 p.c. by weight of  $H_3PO_4$ .

**Medicinal Properties.**—Tonic and refrigerant, hæmatinic and anhidrotic; diuretic in the phosphatic diathesis. Given with Calcium Phosphate in rickets. Quenches the craving for fluids in diabetes.

Used as a partial substitute for organic acids in cooling drinks and acidulated waters.

**Dose.**—5 to 20 minims = 0.3 to 1.2 c.c.

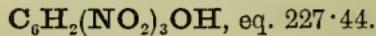
**Prescribing Notes.**—Usually largely diluted with Water and given with some bitter and aromatic tinctures and syrups; should not be mixed with the Syrup of Iron Pyrophosphate, as the mixture becomes solid.

**Incompatibles.**—Lime Water, and all alkalis.

**Official in** Port., 14 p.c.; Dan. and Norw., 13·8 p.c.; Russ., 12·5 p.c.; Jap., Mex., Swed., Swiss and U.S., 10 p.c.

**Not Official.**

**ACIDUM PICRICUM.**



PICRIC ACID. CARBAZOTIC ACID. TRINITROPHENOL.

Pale yellow crystalline scales, prepared by the action of hot Nitric Acid on Phenol-sulphonic Acid.

The excise have imposed restrictions as to its sale and storage.

**Solubility.**—1 in 90 of Water; 1 in 10 of Alcohol (90 p.c.)

**Medicinal Properties.**—A solution (1 or 2 p.c.) of Picric Acid has been recommended as an application to scalds and burns, and also in acute eczema.—*B.M.J.* '96, ii. 651 and 1826; '97, i. 331 and 457; '99, i. 1152; *L.* '03, ii. 640, 799.

It has also been given in  $\frac{1}{2}$  to 1 grain doses as a bitter tonic.

**Official in** Fr. and Mex.

With Ammonia, Potash and Soda it forms crystalline salts which are explosive.

**Solution for Removal of Picric Acid Stains.**—Sodium Benzoate, 1; Boric Acid, 1; Water, 100.

A saturated Aqueous Solution is a delicate test for the presence of Albumen in fluids; even in very dilute solutions a white cloud is formed at the junction of the two liquids, and in stronger solutions the Albumen is precipitated. Used in histological work.

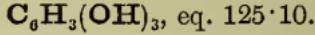
**AMMONII PICRAS.**—Yellow, odourless, glistening, crystalline needles. Soluble 1 in 93 of Water, 1 in 82 of Alcohol (90 p.c.). Given as a substitute for Quinine, also in exophthalmic goitre and malaria.

**Dose.**— $\frac{1}{4}$  to 1 grain = 0·016 to 0·06.

**Not Official.**

**ACIDUM PYROGALLICUM.**

PYROGALLIC ACID. PYROGALLOL.



Light, white crystalline tufts; which have a tendency to become coloured on exposure to strong light, more particularly in solution. The change is more rapid in alkaline solution. Usually prepared by heating Gallic Acid to 185° to 200° C.

**Solubility.**—1 in 2 of Water, and measures 2 $\frac{1}{2}$ ; 9 in 10 of Alcohol (90 p.c.).

**Medicinal Properties.**—Escharotic, antiseptic, and disinfectant. Not given internally; its external use requires care.

Not more than 15 to 25 grains should be used in the twenty-four hours, as violent toxic symptoms may result from its absorption.—*T.G.* '85, 59.

Used in the form of a 10 p.c. **salve**, and applied with a brush twice a day, it proved very useful in Hebra's wards in the treatment of psoriasis. The parts were then covered with cotton wadding or linen, and when very extensive were covered with flannel.—*Pr. xxv.* 377.

An **ointment**, Pyrogallic Acid 40, Starch 40, Vaseline 120, also a **powder**, Pyrogallic Acid 20, Starch 80, have been used for venereal ulcers.—*L.M.R.* '82, 228; '84, 68.

Mixed with Collodium Flexile, 40 grains to the ounce, for psoriasis.—*T.G.* '86, 181.

Largely used in photography. It has also been used for blackening the hair. 1 in 16 of Water is used with a solution of Silver Nitrate (1 in 30 of Water).

To remove stains of Pyrogallic Acid, rub a little Ammonium Persulphate on the fingers and rinse with water.—*P.J.* '98, i. 504a.

**Official** in Austr., Dutch, Fr., Ger., Hung., Mex., Russ., Swed. and Swiss.

**UNGENTUM ACIDI PYROGALLICI** (Jarisch's Ointment).—Pyrogallic Acid, 60 grains; Lard, 1 oz.—*British Skin.*

**UNG. PYROGALLOL CO.**—Pyrogallic Acid, 30 to 60 grains; Ichthyol, 30 grains; Salicylic Acid, 15 grains; Soft Paraffin to 1 oz.—*Middlesex.*

**UNNA'S PYROGALLIC PLASTER MULL.**—Contains 40 p.c. of the Acid, equal to  $\frac{1}{2}$  grain in each square inch of surface.

**Eugallol** (Pyrogallol mono-acetate), a brownish-yellow thick syrupy liquid; **Gallacetophenone**, a yellowish-brown powder; **Lenigallol** (Pyrogallol triacetate), a white powder; and **Saligallol** (Pyrogallol di-salicylate), a resinous solid, are preparations which have received attention in the treatment of skin diseases.

## ACIDUM SALICYLICUM.

SALICYLIC ACID.

$\text{HC}_7\text{H}_5\text{O}_3$ , eq. 137·01.

Colourless, odourless prismatic crystals when prepared synthetically from Carbolic Acid, but the acid derived from the Oil of Winter Green or of sweet Birch, commonly called "natural acid," is usually supplied in large crystals possessing a yellowish or pinkish tint.

**Solubility.**—About 1 in 550 of Water; 1 in 9 of boiling Water; 1 in  $3\frac{1}{2}$  of Alcohol (90 p.c.); 1 in 11 of Alcohol (60 p.c.); 1 in 35 of Alcohol (45 p.c.); 1 in 2 of Ether; 1 in 55 of Chloroform; 1 in 120 of Olive Oil; 1 in 195 of Glycerin;

1 in 8 of Lard (at 180° F.). 20 grains Salicylic Acid are rendered soluble in a fl. oz. of Water by the addition of 25 grains of Borax or 40 grains of Potassium Citrate; but it is better to use Sodium Salicylate.

**Medicinal Properties.**—Antiseptic and powerfully antipyretic; specific in acute rheumatism.

A good preservative of medicated solutions, such as Cocaine salts and Boric Acid, which are otherwise liable to fungoid growths; 1 in 1000 is sufficient for the purpose, but in the eye causes temporary smarting.

Used as a lotion (4 p.c.) in pruritus and urticaria, and some forms of eczema; as an injection (1 in 300) in the dysenteric diarrhoea of children; as an ointment (1 in 6) for pruritus (*Ringer*). With Zinc Oxide and Starch it is used as a 'dusting powder' for infants.

In collodion form it is very useful when applied to hard and soft corns and warts. It softens and removes them.

The collodion is recommended in lupus.—*Pr.* lii. 96.

The injection of Salicylic Acid in case of uterine cancer, recommended as a palliative method when the disease is too far advanced to admit of surgical extirpation.—*P.J.* (3) xxv. 1219.

Report of the Departmental Committee appointed to inquire into the use of preservatives and colouring matters in food. Salicylic Acid be not used in greater proportions than 1 grain per pint in liquid food; and 1 grain per lb. in solid food, its presence in all cases to be declared.—*L.* '01, ii. 1683; *J.S.C.I.* '01, 1228; *P.J.* '01, ii. 620; *C.D.* '01, ii. 880; *Analyst*, '01, 332.

Salicylic Acid as a preservative for foods has been stated to be injurious, for three reasons: (1) That it is antiseptic and anti-fermentative, and therefore liable to interfere with the digestive processes; (2) after absorption is apt to injure the general health; (3) that it is an irritant and apt to injure the mucous membrane of stomach and intestinal canal; but the results of experiments by Doctors Macalister and Bradshaw are opposed to these conclusions, and they contend that there is no justification for them.—*L.* '02, ii. 1544; '03, i. 717.

**Prescribing Notes.**—On account of its slight solubility in Water, it is usually given internally in the form of Sodium Salicylate, which is readily soluble, and is less irritating to the mucous membrane. It is also given in combination with Bismuth and Lithium.

**Dose.**—5 to 20 grains = 0·32 to 1·3 grammes.

**Incompatibles.**—Spirit of Nitrous Ether, Iron salts.

**Official Preparations.**—Sodii Salicylas, Unguentum Acidi Salicylici. Used in the preparation of Injectio Cocainæ Hypodermica, Liquor Atropinæ Sulphatis, and Salol. See also Bismuthi Salicylas.

**Not Official.**—Collempastrum Salicylatum, Collodium Salicylicum, Salicylic dressings, Glycerinum Acidi Salicylici, Lotio Acidi Salicylici Co., Pulvis Salicylicus cum Talco, Salicylic and Creosote Plaster Mulls, Salicylic Acid Suet, Unguentum Acidi Salicylici, Salacetol, Aspirin, Agathin, Glycosal, and Salitannal.

**Official in all the Foreign Pharmacopœias.**

**UNGUENTUM ACIDI SALICYLICI.** SALICYLIC ACID OINTMENT.

Salicylic Acid, 1; White Paraffin Ointment, 49.

**Official in Mex.** (Pomada de Acido Salicilico), Acid 1, Alcohol 2, Vaseline 9; Austr. Add., Sebum Salicylatum (*see below*).

**SODIUM SALICYLATE.** See SODII SALICYLAS.

**Not Official.**

**COLLEMPASTRUM SALICYLATUM** (*Austr. Add.*).—Collempastrum adhesivum mass, 100; Acid Salicylic, 4; Petroleum Ether, 20.

**COLLEMPASTRUM ADHÆSIVUM** (*Austr. Add.*).—Resin Oil, 150; Balsam Copaiba and Resin, of each 100; Adeps Lanæ, 50; Cera flava, 30; liquefy, strain and dissolve in Ether, 1200. To the solution add purified India Rubber 250, and dissolve. Add Orris Root (powdered), 220; powdered Sandarach, 50; Ether, 400.

**COLLODIOUM SALICYLICUM.**—Salicylic Acid, 60 grains; Flexile Collodion, 1 oz.—*Guy's*.

**COLLODIOUM SALICYLICUM COMPOSITUM.**—Salicylic Acid, 60 grains; Extract of Indian Hemp, 10 grains; Flexile Collodion to 1 oz.

**Official in Dutch Supp.**

**COLLODIOUM LACTO-SALICYLICUM.**—Salicylic Acid, 60 grains, Lactic Acid, 1 fl. dram. Flexile Collodion to 1 fl. oz.

**COLLODIOUM SALICYLICUM CUM ZINCI CHLORIDO.**—Salicylic Acid, 60 grains; Zinc Chloride, 30 grains; Flexile Collodion, 1 oz.—*Guy's*.

**SALICYLIC DRESSINGS.**—Gauze, Lint, and Wool, 4 p.c.; Jute, 4 and 10 p.c.

**GLYCERINUM ACIDI SALICYLICI.**—Salicylic Acid, 1 part; Glycerin, 9 parts. Also called Pasta Acidi Salicylici.

**LOTIO ACIDI SALICYLICI CO.**—Salicylic Acid, 10 grains; Boric Acid, 20 grains; Glycerin, 2 dram.; Methylated Spirit, to 1 oz.—*St Mary's*.

**LOTIO ACIDI SALICYLICI CUM BORACE.**—Salicylic Acid, 120 grains; Borax, 60 grains; Glycerin, 1 oz.; Rectified Spirit, 1 oz.; Distilled Water to 10 oz.—*Middlesex*.

**PULVIS SALICYLICUS CUM TALCO** (*Dan., Dutch Supp., Ger., Norw. and Swed.*).—Salicylic Acid, 3; Wheat Starch, 10; Talc, 87; mix to a fine powder. Used in the German Army as a pre-

ventive against perspiring and sore feet. It is applied dry, on a march daily, or in garrison every two or three days. U.S.N.F. substitutes Boric Acid in the place of Wheat Starch.

**SALICYLIC AND CREOSOTE PLASTER MULLS (Unna).**—Contain  $\frac{1}{2}$  grain of Salicylic Acid and 1 grain of Creosote to the square inch; also twice this strength. Possess a solvent power on horny epidermis, the Creosote acting as an anaesthetic. Also used in the treatment of lupus.—*L.* '86, ii. 574; *B.M.J.* '87, ii. 451.

Salicylic Acid and Creosote can also be applied as an ointment with Lard and Wax.

**SEBUM SALICYLATUM (Austr. Add.).**—Salicylic Acid, 2; Benzoated Lard, 100. Used in the German Army for sweaty feet and soreness from riding.

Ger., same strength, but Benzoic Acid replaces Benzoin.

**UNGENTUM ACIDI SALICYLICI.**—Salicylic Acid, 30 grains; Benzoated Lard, 1 oz.; melt over a water bath, and stir till cold.—*British Skin.*

Used for eczema, psoriasis, ringworm, and for foul ulcers.

**SALACETOL.**—Is obtained by the action of Monochloro-acetone on Sodium Salicylate. Crystallises in long needles, melting at 71° C.; soluble 1 in 2200 of Water, 1 in 15 of Alcohol. It is unaffected by dilute acids, but decomposed by weak alkali with liberation of Salicylic Acid. Introduced as an intestinal disinfectant, resembling Salol in its action.—*B.M.J.E.* '96, i. 92; *L.* '96, ii. 1821.

**Dose.**—15 to 30 grains = 1 to 2 grammes, for adults; 4 to 8 grains = 0·26 to 0·52 gramme for children.

**ASPIRIN (Acetylsalicylic Acid).**—Minute, white, odourless crystalline needles. Soluble 1 in 400 water, 1 in 5 of Alcohol (90 p.c.); soluble in Ether.

**Dose.**—10 to 15 grains = 0·65 to 1 gramme, three times a day.

Antipyretic and antirheumatic.—Given as a substitute for the Salicylates in cases of acute and chronic rheumatism, and rheumatic affections, also in pleurisy. The advantage, that it does not produce gastric irritation nor singeing in the ears to the same extent as the Salicylates. Is best prescribed in the form of cachets or wafers.—*B.M.J.E.* '99, ii. 3; 68, 96; '01, i. 92; ii. 56; *L.* '99, ii. 219; *P.J.* '99, ii. 135; '00, ii. 734, 775; '01, i. 665.

In various children's diseases, rheumatic affections, and in whooping-cough. Action slower than Sodium Salicylate, but effect is more prolonged.—*Pr. lxx.* 141; *B.M.J.E.* '02, i. 12.

15 grain doses once or twice daily given with beneficial effects in cases of inoperable carcinoma.—*L.* '03, i. 984.

In chorea, 10 to 15 grains 3 or 4 times a day.—*L.* '03, i. 526.

Aspirin should not be prescribed with alkalis, or Sodium Bicarbonate.—*P.J.* '03, i. 2, 39.

Official in Dutch Supp.

**AGATHIN.**—A compound of Salicylic Aldehyde with Methyl-phenylhydrazine. Pale greenish crystals, insoluble in Water, soluble in Alcohol (90 p.c.) and Ether. Has been recommended as an analgesic in sciatica, rheumatic and neuralgic affections.—*M.A.* '95, 8, 603; *Y.B.T.* '94, 463; unreliable and dangerous.—*B.M.J.* '98, ii. 1055.

**Dose.**—5 to 10 grains = 0·32 to 0·65 grammes.

**GLYCOSAL** (Monosalicylic Acid Glycerin Ester).—White crystalline powder, moderately soluble in Water, readily in Alcohol (90 p.c.) Introduced as a substitute for Salicylates. Antiseptic, antirheumatic.

**Dose.**—5 to 30 grains = 0·32 to 2 grammes.

**SALITANNAL.**—A condensation product of Salicylic Acid and Gallic Acid. Introduced as an antiseptic application for wounds.

**Iodo-Salicylic Acid** and **Di-Iodo Salicylic Acid** are Iodine compounds of Salicylic Acid in which one or two atoms of Hydrogen respectively are replaced by Iodine.—*B.M.J.* '97, ii. 734.

## ACIDUM SULPHURICUM.

### SULPHURIC ACID.

A heavy colourless odourless liquid, of oily consistence, containing about 98 p.c. by weight of Hydrogen Sulphate,  $\text{H}_2\text{SO}_4$ , = 97·34.

A fuming Sulphuric Acid; is known under the title of **Nordhausen Sulphuric Acid**, and is prepared by the distillation of dry Ferrous Sulphate.

Under the name of **Solid Sulphuric Acid**, Sulphuric Anhydride has been introduced into commerce.

**Medicinal Properties.**—A powerful caustic, and when so used it is made into a paste with an equal quantity of charcoal. In the form of Nordhausen Sulphuric Acid it is used in cancer (*see below*). When diluted it is a tonic refrigerant, exciting the appetite and promoting digestion; it is a valuable intestinal astringent, given with very doubtful success in haematemesis, haematuria and haemoptysis; it is useful in controlling diarrhoea; it diminishes night sweating, more particularly when given with Zinc Sulphate; useful in treating chronic lead poisoning.

**Incompatibles.**—Alkalies and their Carbonates, salts of Calcium and Lead.

**Official Preparations.**—Acidum Sulphuricum Aromaticum, and Acidum Sulphuricum Dilutum. Used in the preparation of Acidum Hydrochloricum, Acidum Nitricum, Acidum Sulphuratum, Æther, Æther Aceticus, Cupri Sulphas, Ferri Sulphas, Liquor Ferri Persulphatis, Magnesii Sulphas, Potassii Sulphas,

Sodii Sulphas, Sodii Sulphocarbolas, Spiritus  $\text{\textit{A}}\text{\textit{E}}\text{\textit{t}}\text{\textit{h}}\text{\textit{e}}\text{\textit{r}}\text{\textit{i}}\text{\textit{s}}$  Compositus, Spiritus  $\text{\textit{A}}\text{\textit{E}}\text{\textit{t}}\text{\textit{h}}\text{\textit{e}}\text{\textit{r}}\text{\textit{i}}\text{\textit{s}}$  Nitrosi, Zinci Sulphas and Zinci Sulphocarbolas. **Aromatic Sulphuric Acid** is contained in Infusum Cinchonae Acidum. **Dilute Sulphuric Acid** is contained in Infusum Rosae Acidum. Used in the preparation of Acidum Hydrocyanicum Dilutum, Antimonium Sulphuratum and Atropinæ Sulphas.

**Not Official.**—Liquor Acidus Halleri, Mistura Acidi Sulphurici Aromaticæ, Mynsicht's Elixir of Vitriol, Michel's Paste.

**Antidotes.**—In case of poisoning by Sulphuric Acid, Magnesia is preferable to Chalk. For other antidotes see Hydrochloric and Nitric Acids.

**Official** in all the Pharmacopœias, ranging from sp. gr. 1.835 to 1.845. Dan., Ger. and Swed. contain also a **crude acid**.

### **ACIDUM SULPHURICUM AROMATICUM.** AROMATIC SULPHURIC ACID: *B.P. Syn.—ELIXIR OF VITRIOL.*

Mix gradually 6 of Sulphuric Acid with 59 of Alcohol (90 p.c.); add Tincture of Ginger 20, and Spirit of Cinnamon 1.

Sp. gr. 0.922 to 0.926. Contains 13.65 p.c. of Hydrogen Sulphate,  $\text{H}_2\text{SO}_4$ .

**Dose.**—5 to 20 minims = 0.3 to 1.2 c.c.

Sulphovinic Acid stated to occur in Acidum Sulphuricum Aromaticum, its quantity being dependent on age of sample.—*P.J.* '02, ii. 137; *C.D.* '02, ii. 292.

**Official** in U.S., Sulphuric Acid 100, Tincture of Ginger 50, Oil of Cinnamon 1, Alcohol sufficient to measure 1000; add the Sulphuric Acid gradually and with great caution to 700 of Alcohol and allow it to cool, then add to it the Tincture of Ginger and Oil of Cinnamon, and finally enough Alcohol to make the product measure 1000. —

*See also below Liquor Acidus Halleri.*

### **ACIDUM SULPHURICUM DILUTUM.**—DILUTED SULPHURIC ACID.

Mix gradually 4 of Sulphuric Acid with 40 of Distilled Water, and when cold add more Distilled Water to make  $48\frac{1}{2}$  of Dilute Acid at 60° F.

As great heat is developed in mixing strong Sulphuric Acid and Water, it is always safer to add the Acid to the Water than the Water to the Acid. With Acid 1, Water 1, the temperature rises to 270° F.

12 minims contain 1 minim of strong Sulphuric Acid.

**Dose.**—5 to 20 minims = 0.3 to 1.2 c.c.

**Prescribing Notes.**—Prescribed, much diluted, in mixtures;

or in cough linctuses, with Squill, Poppies, and Syrup of Mulberries; also to dissolve Quinine.

**Official** in Austr., Acid 1, Water 4·76, sp. gr. 1·12; Ital., Acid 1, Water 4, sp. gr. 1·180; Belg., Dutch, Ger. and Russ., Acid 1, Water 5, sp. gr. 1·110 to 1·114; Dan. and Norw., Acid 1, Water 7, sp. gr. 1·081 to 1·085; Fr., Hung. and Port., Acid 1, Water 9; Span., Acid 1, Water 8; Swed., Swiss and U.S., 10 p.c., sp. gr. about 1·070. All by weight.

### Not Official.

**LIQUOR ACIDUS HALLERI.**—*Syn.*—ACIDUM SULPHURICUM ALCOHOLISATUM, MISTURA SULPHURICA ACIDA, AQUA RABELI.

Austr., Belg., Ger., Hung., Mex., Port., Russ., Span. and Swiss.—Sulphuric Acid, 1; Alcohol (90 p.c.), 3.

Fr.—Sulphuric Acid, 1; Alcohol (90 p.c.), 3; Poppy Petals, 0·04.

Dan., Dutch, Ital., and Norw.—Sulphuric Acid, 1; Alcohol, 1. All by weight.

**MISTURA ACIDI SULPHURICI AROMATICA.**—Aromatic Sulphuric Acid, 10 minims; Red Mixture, to 1 oz.

**MYNSICHT'S ELIXIR OF VITRIOL.**—Cinnamon, Ginger, and Cloves, of each 3; Calamus Aromaticus, 8; Galangal, 12; Sage, 4; Peppermint, 4; Cubebs, 2; Nutmeg, 2; Aloes Wood, 1; Lemon Peel, 1; Sugar Candy, 32; Alcohol (90 p.c.), by weight, 144; Sulphuric Acid, by weight, 96. Digest for three weeks.

Dose.—5 to 10 minims = 0·3 to 0·6 grammes.

**MICHEL'S PASTE.**—Nordhausen Sulphuric Acid, 3, by weight; Asbestos, finely powdered, 1. Should be prepared fresh as required.

## ACIDUM SULPHUROSUM.

### SULPHUROUS ACID.

A colourless liquid, with a strong characteristic odour of burning Sulphur, containing 6·4 p.c. of Hydrogen Sulphite,  $\text{H}_2\text{SO}_3$ , eq. 81·46. Sp. gr. 1·025.

**Medicinal Properties.**—It is a powerful deoxidizing agent, disinfectant and antiseptic. In 1 dram doses, freely diluted, it is valuable in vomiting depending on fermentation in the stomach; and as an intestinal antiseptic in enteric fever. Diluted with 1 or 2 parts of Water, it is used as a spray in diphtheria and ulcerated sore-throat; mixed with equal parts of Glycerin, as an application in erysipelas, ring-worm and other parasitic skin diseases; also for chapped hands and chilblains; when mixed with equal parts of Glycerin is very effectual in chapped nipples; as a lotion, 1 or 2 drams to 1 oz. of Water, for wounds, cuts, ulcers, and

bed-sores; as an inhalation in nasal catarrh and influenza, 60 minimis in 20 oz. of Water at 60° to 100° F.

Pfeiffer found that 0·5 to 1 p.c. aqueous solution caused excessive and extensive gastritis. Even 20 minimis largely diluted caused irritation of the digestive organs (*A.J.P.* '90, 626); Brunton, however, strongly recommends 1 dram. doses thoroughly diluted, iu gastric fermentation.

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

**Official** in Port., Soluto de Gaz Sulfuroso; U.S., 6·4 p.c.

### Not Official.

**SULPHUR DIOXIDE LIQUEFIED.** This is also commonly known as **Liquefied Sulphurous Acid Gas**. It is supplied in syphons, and in tinned iron vessels with soft lead exit-tube.

**Disinfecting with Sulphur.** This is usually done with liquid Sulphur Dioxide. The room to be disinfected should be sealed up so as to prevent any ventilation, by blocking up the fire-place and pasting paper over the cracks of the windows. The small leaden exit-tube of the vessel is cut in the room, so as to allow the gas to escape somewhat slowly, and the operator retires quickly, shuts the door and papers up the cracks of the door so as to complete the sealing of the room. The room is allowed to remain closed for 12 hours, and then opened cautiously. About 20 oz. gas is required for a room of a size 1700 cubic feet. When the liquefied gas is unobtainable, Sulphur which is sold in the form of Sulphur Candles can be used as a substitute, but the gas is much more effectual.

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## ACIDUM TANNICUM.

TANNIC ACID.

*B. P. Syn.*—TANNIN.

$C_{14}H_{10}O_9$ , eq. 319·66.

B.P. gives the formula as  $C_{14}H_{10}O_9$ ,  $2H_2O$ , but the  $2H_2O$  is discountenanced by most of the standard works on chemistry.

A pale buff-coloured micro-crystalline powder, possessing an acid reaction and a characteristic astringent taste.

**Solubility.**—10 in 5 of Water; 10 in 6 of Alcohol (90 p.c.); 3 in 1 of Absolute Alcohol; 1 in 3 of Glycerin, or if warmed, 1 in 1; sparingly in Olive Oil; almost insoluble in Benzol, in Chloroform, and in Ether.

These solubilities were made with Tannic Acid which was very soluble, but different samples vary in solubility.

Commercial Tannic Acid frequently contains some proportion of Gallic Acid, which when dissolving in Water is the last portion to go into solution.

**Medicinal Properties.**—Styptic and local astringent. 60 grains in 10 oz. of Rose Water is used as a spray for relaxed sore-throat; the same strength is also used as an injection in leucorrhœa and in chronic gonorrhœa with advantage; 3 grains to the oz. is used as a nasal douche; 60 grains to the oz. as an ointment; the powder has been used as a snuff in epistaxis. Internally for gastric and intestinal haemorrhage, acting as a direct styptic. A dose of 1 dram is often successful in haemorrhage from gastric ulcer. For suppositories and pessaries see p. 50. The glycerin is used as a paint in relaxed throat, and for nasal discharges; also locally as a styptic.

Equal parts of Glycerin of Tannin, and Glycerin of Alum form a good application for relaxed throat.

As an injection into nasal polypi.—*L.* '87, i. 543.

Warm tannin enemata were given with success in the cholera at Naples.—*L.* '85, i. 352.

Tannic Acid is no doubt a local styptic by its albumen-coagulating power. But the careful researches of Stockman have demonstrated the futility of using it as a remote astringent.—*B.M.J.* '00, ii. 1070.

**Dose.**—2 to 5 grains = 0·13 to 0·32 grammes.

**Prescribing Notes.**—Prescribed in Water, and may be combined with the Ferrous (but not with the Ferric) salts of Iron. Can be given in cachets or Compressed Tablets. 4 grains with  $\frac{1}{2}$  minim of Glycerin makes a nice pill. 60 grains to 1 oz. of Chalk with 30 grains of Powdered Soap makes an astringent dentifrice.

**Incompatibles.**—Mineral Acids, Alkalies, Antimony salts, Lead and Silver, Ferric salts, the vegetable alkaloids, and Gelatin.

**Official Preparations.**—Glycerinum Acidi Tannici, Suppositoria Acidi Tannici, and Trochiscus Acidi Tannici.

**Not Official.**—Crayons de Tannin, Lotio Acidi Tannici Sulphurosa, Pessary or Vaginal Suppository, Schuster's Pastilles, Suppositorium Acidi Tannici c. Opio, Supp. Ac. Tann. et Belladonnae, Supp. Ac. Tann. et Morphinæ, Unguentum Acidi Tannici c. Opio, Tannic Wool, Tannalbin, Honthrin, Glutanol, Tannigen, Tannoform, Tanocol, and Tannone.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

#### GLYCERINUM ACIDI TANNICI. GLYCERIN OF TANNIC ACID.

Tannic Acid, 1; Glycerin, sufficient to produce 5. (1 in 5)

**Official in Dutch, 1 and 5; Port., 1 and 9; U.S., 1 and 4**  
Belg., Fr. and Mex., 1 and 5 of Glycerin of Starch.

#### SUPPOSITORIA ACIDI TANNICI. TANNIC ACID SUPPOSITORIES.

Contains 3 grains = 0·2 grammes, of Tannic Acid in each suppository, mixed with Oil of Theobroma.

**TROCHISCUS ACIDI TANNICI. TANNIC ACID LOZENGE.**

$\frac{1}{2}$  grain of Tannic Acid in each, with Fruit Basis.

**Dose.**—1 to 6 lozenges.

Official in Jap.,  $\frac{3}{4}$  grain each; U.S., about 1 grain each.

**Not Official.**

**CRAYONS DE TANNIN (Fr.).**—Tannin, 20; Gum Acacia, 1 (both in powder); mix and make into a mass of pilular consistence by means of equal parts Glycerin and Water, then roll into cylinders of the size required.

**LOTIO ACIDI TANNICI SULPHUROSA.**—Glycerin of Tannic Acid, 1; Sulphurous Acid, 1; Distilled Water, to make 8.—*St. Bartholomew's.*

**PESSARY OR VAGINAL SUPPOSITORY.**—Tannic Acid, 10 grains; Stearin, or Oil of Theobroma, sufficient to make 2 drm.; for one pessary. Used in leucorrhœa.

**SCHUSTER'S PASTILLES.**—Tannic Acid, 30 grains; Opium, 1 grain; Glycerin, q.s. to form suitable cylinders for the male urethra.

**SUPPOSITORIUM ACIDI TANNICI C. OPIO.**—Tannic Acid, 3 grains; Powdered Opium, 1 grain; Stearin, or Oil of Theobroma, 11 grains. Mix.

**SUPPOSITORIA ACIDI TANNICI ET BELLADONNÆ.**—Tannic Acid, 3 grains; Extract of Belladonna (*B.P. '85*),  $\frac{1}{2}$  grain; Oil of Theobroma to 15 grains.—*St. Bartholomew's.*

**SUPPOSITORIA ACIDI TANNICI ET MORPHINÆ.**—Tannic Acid, 3 grains; Morphine Hydrochloride,  $\frac{1}{2}$  grain; Oil of Theobroma, to 15 grains.—*Westminster.*

**UNGENTUM ACIDI TANNICI C. OPIO.**—Tannic Acid, 30 grains; Powdered Opium, 30 grains; Lard, 1 oz.—*British Skin.*

**TANNIC WOOL.**—Dissolve 2 of Tannic Acid in 60 of Water, and with it thoroughly moisten 8 of Absorbent Cotton Wool; press so as to remove 30 of the fluid, then dry the wool in a warm chamber. When dry remove any discoloured portion. This is sold as Wool for cigarettes.

**TANNALBIN.**—A light brown, tasteless powder, insoluble in water. A combination of Tannic Acid with albumin, which by a special treatment has been so altered that it is insoluble in the gastric juice, ordinary Albumin Tannate being readily soluble.

It has been introduced as an intestinal astringent.

**Adult Dose.**—15 grains = 1 grammes, given at intervals of one or two hours.

Official in Dutch Supp.

Tannalbin and Bismuth Subnitrate given early in the morning, as astringents in treatment of catarrhal ulcers of the large intestine.—*B.M.J.E.* '99, i. 59.

**HONTHIN** (Albumin Tannate).—Greenish-brown tasteless odourless powder. Insoluble in water.

**Dose.**—10 to 30 grains = 0·65 to 2 grammes, three to five times a day for adults; 5 grains = 0·32 grammes, for children.—*P.J.* '01, ii. 345.

**GLUTANOL.**—Combination of Tannic Acid with vegetable fibrin. Similar in action and properties to Tannalbin. Administered in powder form.

**Dose.**—5 to 15 grains = 0·32 to 1 gramme.—*P.J.* '02, ii. 240.

**TANNIGEN** (Di-acetyl Tannin).—A greyish-white tasteless powder. Practically insoluble in Water, but readily in Alkaline solutions. Recommended in diarrhoea, principally of children, but also in that of adults. It passes through the stomach unchanged, but on entering the alkaline intestinal tract it breaks up and acts as an astringent.

**Dose.**—1 to 3 grains = 0·06 to 0·18 gramme for children, and 5 to 10 grains = 0·32 to 0·65 gramme for adults. Small doses can be mixed with an equal quantity of Milk Sugar, and larger doses for adults can be taken in **cachets**.

**Official in Dutch Supp.**

**TANNOFORM** (Methyl-Ditannin).—A light pinkish-brown odourless and tasteless powder. A condensation product of Tannic Acid and Formic Aldehyde. It is claimed to possess the astringent effects of Tannin with the antiseptic and drying properties of Formaldehyde. Used as an application in skin diseases, and to wounds, either alone or mixed with Starch, or diluted 1 to 4 with French chalk for a dusting powder.

As a 10 p.c. ointment in eczema.—*P.J.* '99, ii. 43; *B.M.J.E.* '99, ii. 48; *M.A.* '00, 182.

Rubbed into the chest for night sweats in phthisis—*B.M.J.E.* '01, ii. 59.

**Official in Swed.**

**TANOCOL.**—A white or nearly white odourless and tasteless powder, a combination of Gelatin and Tannic Acid. Insoluble in Water. Stated to be useful as an intestinal astringent.

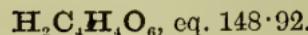
**Dose.**—10 to 15 grains = 0·65 to 1 gramme, for an adult; 5 grains = 0·32 gramme, for children.—*P.J.* '99, i. 538; *L.* '03, i. 1039.

**TANNONE.**—A condensation product of Tannic Acid and Hexamethylenetetramine. A light brown tasteless powder, almost insoluble in Water and weak Acids, and dissolves slowly in weak Alkalies.

**Dose.**—15 grains = 1 gramme for adults; children, 3 to 5 grains = 0·2 to 0·32 gramme.

**ACIDUM TARTARICUM.**

TARTARIC ACID.



Colourless and odourless, translucent monoclinic prisms, possessing a strongly acid taste.

**Solubility.**—10 in 8 of Water, and measures 14; 1 in  $2\frac{1}{2}$  of Alcohol (90 p.c.); 1 in  $4\frac{1}{2}$  of Glycerin; 1 in 40 of Ether; 1 in 5 of Absolute Alcohol; nearly insoluble in Benzol and Chloroform.

The solubility of this acid in Ether naturally varies with the amount of Water and Alcohol contained in the Ether. The above figure represents the solubility in B.P. Ether (sp. gr. 0.735), but the figure for Ether Purus (sp. gr. 0.720) is 1 in 195.

**Medicinal Properties.**—The same as Citric Acid, for which it was formerly substituted in saline mixtures.

**Dose.**—5 to 20 grains = 0.32 to 1.3 grammes.

**Incompatibles.**—Salts of Potassium, Calcium, Mercury and Lead, Alkaline Carbonates, and the vegetable astringents.

**Official Preparations.**—Used in the preparation of Pulvis Sodaæ Tartarataæ Effervescentis, Sodii Citro-Tartras Effervescentis, and the other granular effervescing preparations.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

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**Not Official.****ACONITI FOLIA.**

ACONITE LEAVES.

The fresh leaves and flowering tops of *Aconitum Napellus*, gathered when about one-third of the flowers are expanded, from plants cultivated in Britain.

This plant and the Extract from the fresh herb were formerly official, but are now omitted.

**Official in Belg., Dutch, Fr., Mex., Port., Russ., Span. and Swiss.**

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**ACONITI RADIX.**

ACONITE ROOT.

The root of *Aconitum Napellus*, collected in the autumn from plants cultivated in Britain, and dried.

**Medicinal Properties.**—Anodyne, antiphlogistic, antipyretic, diaphoretic and diuretic. Externally it relieves the

pain of acute and chronic rheumatism, facial neuralgia, and of itching, as in erythema. Given internally it lessens the frequency and tension of the pulse, relieves pain and high temperature, and is thus useful in all acute local inflammations (not advanced), such as those of pneumonia, eruptive fevers, erysipelas, tonsillitis, peritonitis, and painful neuralgic affections; contra-indicated when valvular disease of heart is present.

*Ph. Ger.* maximum single dose, 0·1 gramme; maximum daily dose, 0·3 gramme.

**Antidotes.**—In case of poisoning by Aconite, use emetics, Apomorphine  $\frac{1}{10}$  grain, Alcoholic stimulants; Atropine or Belladonna, Digitalis, Amyl Nitrite.

Atropine is antagonistic to the action of Aconitine on the heart.—*L.* '81, i. 74.

**Official Preparations.**—Linimentum Aconiti and Tinctura Aconiti. Used in the preparation of Aconitina.

**Not Official.**—Extractum Aconiti Radicis Alcoholicum, Chloroformum Aconiti, Linimentum Aconiti Compositum and Trochisci Aconiti.

**Official in Austr., Belg., Dutch Supp., Fr., Ger., Hung., Ital., Mex., Port., Russ., Span., Swiss and U.S.**

#### **LINIMENTUM ACONITI. LINIMENT OF ACONITE.**

Powdered Aconite Root percolated with Alcohol (90 p.c.) to produce a liquid, of which 30 represents 20 of root and contains 1 of camphor. (1 in  $1\frac{1}{2}$ )

This liniment was introduced by Peter Squire who made it 1 in 1, and it was kept this strength in B.P. '64 and '67. It was diluted to 1 in  $1\frac{1}{2}$  in B.P. '85, but recent experiments (*P.J.* '03, i. 458) show that it can be made 1 in 1 and practically contain all the alkaloid.

Applied with a camel's-hair pencil, alone, or mixed in equal proportions with Soap Liniment or Ammoniated Camphor Liniment, and rubbed on the part (but not upon an abraded surface), relieves acute neuralgia.

U.S., fluid extract, 1 in 1.

#### **TINCTURA ACONITI. TINCTURE OF ACONITE.**

1 of Aconite Root, in No. 40 powder, percolated with Alcohol (70 p.c.) to yield 20. (1 in 20)

**Dose.**—5 to 15 minims = 0·3 to 0·9 c.c.; if very frequently repeated, 2 to 5 minims = 0·1 to 0·3 c.c.

*Ph. Ger.* maximum single dose, 0·5 gramme; maximum daily dose, 1·5 gramme; of the 1 in 10 Tincture.

It is better given in small doses and very frequently,  $\frac{1}{2}$  to 1 minim every ten minutes or quarter of an hour for two hours, then hourly.—*Ringer*,

Five minims given every three or four hours, increasing the dose to 20 minims, succeeded in curing a case of neuralgia in the face, when every other remedy tried had failed.

**Dr. Fleming's Tincture of Aconite** was much stronger, being about the same strength as the present Liniment, 1 in  $1\frac{1}{2}$ , but without the Camphor. **Dr. Turnbull's Tincture of Aconite** was rather weaker than Fleming's.

Official in Austr. and Swiss, 1 Root in 10 Spirit. Mex. and Hung., 1 Root and 5. Belg., 1 dried Leaves and 5. Belg. and Swiss, also 1 fresh Herb and 1; Fr., 1 dried Leaves and 5; Alcoolature, 1 fresh Leaves and 1; also 1 fresh Root and 1. Ger., 1 Root and 10. Ital., 1 Root and 5. Port., 1 dried Leaves and 5; also 1 Root and 5; and 1 fresh Leaves and 1. Span., 1 fresh Leaves and 1; also the same with Spirit of Ether. All by weight. U.S., Root 35, Alcohol to measure 100.

#### Not Official.

**EXTRACTUM ACONITI RADICIS ALCOHOLICUM.** — Aconite Root in powder, percolated with Alcohol (90 p.c.), and the product evaporated to a pilular consistence.

**Dose.**— $\frac{1}{6}$  to  $\frac{1}{2}$  grain = 0.01 to 0.03 grammes.

This must not be confounded with Extractum Aconiti, *B.P.*'85, which was much weaker.

Official in Austr., Hung. and Russ., 70 p.c. Alcohol; Fr. and Mex., 60 p.c. Alcohol; Ital., Diluted Alcohol; Swiss; U.S., 94 p.c. Alcohol; Dutch Supp., aqueous.

**CHLOROFORMUM ACONITI.**—Powdered Root, 20; Chloroform to percolate, 20. Painted on with a camel's-hair brush, relieves neuralgia in almost every form.

The formula given in *B.P.C.* is impracticable.

**LINIMENTUM ACONITI COMPOSITUM (Squire).**—Chloroform of Aconite, 1; Liniment of Aconite, 7. Sprinkled on impermeable piline and applied for neuralgia.

**LINIMENTUM ACONITI COMPOSITUM.** *Syn.* A.B.C. Liniment.—Aconite Liniment, Belladonna Liniment, Chloroform Liniment, equal parts.—*Guy's.*

Liniment of Chloroform contains Olive Oil, which will not dissolve in the other Liniments.

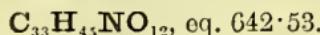
**TROCHISCI ACONITI.**—Each lozenge contains  $\frac{1}{2}$  minim Tincture of Aconite.

**Dose.**—One lozenge every half-hour or hour in tonsillitis and febrile affections of the throat.

**Emplast. Aconiti**, also **Emp. Aconiti et Belladonnæ**, are made in rubber combination.

**ACONITINA.**

ACONITINE.



A colourless crystalline Alkaloid, obtained from Aconite Root.

**Solubility.**—Almost insoluble in Water; 1 in 35 of Alcohol (90 p.c.); 1 in 45 of Ether; 1 in 1 of Chloroform; soluble in Oleic Acid.

**Medicinal Properties.**—It relieves acute nervous pain when rubbed on the part in the form of ointment, producing a tingling sensation, followed by numbness. Care must be taken that it does not come in contact with a mucous surface, such as the conjunctiva, or with abraded skin.

It has been applied with marked benefit in trigeminal neuralgia, and to relieve the pain of *acute* rheumatism and gout.

**Dose.**—As a pure crystalline Aconitine would probably be fatal to an adult in a dose of 3 milligrammes ( $\frac{1}{2}$  grain), the maximum dose should not exceed  $\frac{1}{10}$  milligramme ( $\frac{1}{660}$  grain) pro dosi, or  $\frac{5}{10}$  milligramme ( $\frac{1}{132}$  grain) per diem, and the commencing dose should be smaller.

Solutions of the alkaloid are prone to decomposition; aqueous or alcoholic solutions should therefore be slightly acidified with **Hydrochloric Acid**, or crystallised **Aconitine Nitrate** should be used.—P.J. (3) xvi. 802.

**Official Preparation.**—Unguentum Aconitinæ.

**Not Official.**—Oleatum Aconitinæ.

**Official** in Fr., Duquesnel process; Span., similar; Ital.; Mex.; all are crystalline products; Belg.; Hung. specifies 'German Aconitine'; Port., indefinite, must obviously contain Aconines.

**Pseudaconitine.**—A highly toxic crystalline alkaloid obtained from *Aconitum ferox*; only slightly soluble in Water, but readily in Alcohol and Chloroform, less readily in Ether. Dunstan gives m. p. as 201° C.—J.C.S. Trans. '97, 853.

**UNGUENTUM ACONITINÆ. ACONITINE OINTMENT.**

Dissolve 10 grains of Aconitine in 80 grains of Oleic Acid by the aid of gentle heat; and mix with 410 grains of Lard.  
(1 in 50)

**Not Official.**

**OLEATUM ACONITINÆ.**—Aconitine, 2 grains; Oleic Acid, 98 grains; dissolve.

Dr. Shoemaker states that this has a slight local action, and it can be used in mild cases of neuralgia.—B.M.J. '84, ii. 750.

**ACTÆA RACEMOSA.***See CIMICIFUGÆ RHIZOMA.***ADEPS.**

LARD.

The purified Fat of the Hog, *Sus scrofa*.**Solubility.**—1 in 22 of Ether, and 1 in 16 of Oil of Turpentine; almost insoluble in Alcohol (90 p.c.)**Medicinal Properties.**—Emollient. Added to poultices to prevent them drying and sticking to the skin.**Official Preparation.**—Adeps Benzoatus. Used in the preparation of Emplastrum Cantharidis, Pilula Phosphori, and the following Ointments: Aconitine, Atropine, Cocaine, Iodine, Mercury, Mercuric Nitrate, Resin, and Veratrine.**Official in Austr., Belg., Dan., Dutch, Fr. (Axonge), Ger., Hung., Ital. (Grasso Suino), Jap. (Adeps Suillus), Norw. (Axungia), Mex. (Manteca de Cerdo), Port. (Banha), Russ., Span. (Grasa de Cerdo), Swed., Swiss and U.S.****ADEPS BENZOATUS. BENZOATED LARD.**

Digest 210 grains of Benzoin in 16 oz. of melted Lard on a water-bath for two hours; strain and stir whilst cooling.

(1 in 33)

Benzoated Lard is irritating, and should not be used for eye ointments.

**Official Preparations.**—Used for making the following Ointments: Belladonna, Cantharides, Chrysarobin, Galls, Mercuric Iodide, Mercuric Oleate, Mercurous Chloride, Potassium Iodide, Stavesacre, Sulphur, Sulphur Iodide, and Zinc.**Official in** Dan., Dutch Supp., Ital. (Grasso con Benzoino), Norw., Swed., Swiss and U.S., Benzoin 2, Lard 100; Russ., Benzoin 2, Lard 100, dried Sodium Sulphate 5; Mex. (Pomeda Benzoada), Tincture of Benzoin 5, Lard 100; Span., 3 and 100; Austr. and Belg., 4 and 100; Fr., 5 Tincture in 1000; Ger., 1 Acid. Benzoic. in 100.**Not Official.****UNNA'S SALVE MULLS.**—The bases of these are hog's lard and beef suet (singly or combined), with which are incorporated various medicaments, spread on muslin.—*L.M.R.* '81, 452.

**ADEPS LANÆ.**

## WOOL FAT.

The purified fat of sheep's wool, consisting chiefly of cholesterin.

**Solubility.**—Readily soluble in Chloroform and Ether, but only partially so in Alcohol (90 p.c.). Will incorporate its own weight of Water.

**Medicinal Properties.**—Emollient; is very readily absorbed by the skin, and thus promotes the action of remedies combined with it.

**Official Preparation.**—Adeps Lanæ Hydrosus.

**Official in Dutch Supp., Ger., Ital. (Lanolin), Russ., and Swed.**

**ADEPS LANÆ HYDROSUS. HYDROUS WOOL FAT.**

3 of Distilled Water incorporated with 7 of Wool Fat by rubbing together in a warm vessel.

**Medicinal Properties.**—Used as a basis for ointments. It does not become rancid. Mixes with about half its weight of Water. It is better for ointments when mixed with an equal weight of Soft Paraffin.

**Official Preparations.**—Used in the preparation of Unguentum Conii, and Unguentum Hammamelidis.

**Official in Austr., Dan. and Norw., Lanolinum; Ital. and Mex., Lanolina; Dutch Supp., Ger. and Russ., Adeps Lanæ cum Aquâ; Swed. and Swiss, Adeps Lanæ; U.S.**

**Not Official.**

**UNGUENTUM LANOLINI.**—Hydrous Lanolin, 2; Soft Paraffin, 1.

**UNGUENTUM ADIPIS LANÆ (Ger.).**—Wool Fat (anhydrous), 20; Water, 5; Olive Oil, 5.

An improvement on this is the following:

**ADEPS LANÆ CUM OLEO.**—Hydrous Wool Fat, 9; Almond Oil, 1.

**ADHATODA.**

The fresh and the dried Leaves of *Adhatoda Vasica*, are official in *Ind. and Col. Add.* for India and the Eastern Colonies: as are also **Extractum Adhatodæ Liquidum** (1 in 1), dose 20 to 60 minims = 1·2 to 3·6 c.c.; **Succus Adhatodæ**, the freshly expressed and strained juice of the bruised fresh leaves, dose 1 to 4 fl. dram. = 3·6 to 14·2 c.c. and **Tinctura Adhatodæ** (1 in 8), dose 30 to 60 minims = 1·8 to 3·6 c.c.

Not Official.

### ADONIS.

The leaves and stalks of *Adonis vernalis*.

**Medicinal Properties.**—A cardiac tonic. Useful in mitral and aortic regurgitation, relieving intracardiac pressure and praecordial pain.—*L.* '88, ii. 1012. A useful adjunct to bromides in epilepsy.—*L.* '94, ii. 1288; *B.M.J.E.* '95, i. 12, and '98, i. 44.

**Dose.**—2 to 6 grains = 0·13 to 0·4 gramme in powder, or the equivalent of an infusion, tincture, or fluid extract.

Official in Dutch Supp., Ital. and Russ.

**ADONIDIN.**—A glucoside, very deliquescent, soluble in Water and Alcohol (90 p.c.).

**Dose.**— $\frac{1}{6}$  to  $\frac{1}{2}$  grain = 0·01 to 0·03 gramme. Generally given in pill.

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**ADRENALIN.**—See SUPRARENAL GLAND.

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### ÆTHER.

#### ETHER.

A light, colourless, mobile liquid, sp. gr. 0·735, containing not less than 92 p.c. by volume of Ethyl Oxide ( $C_2H_5_2O$ , eq. 73·52). It is also known as Ethyl Ether, and Sulphuric Ether. It is very volatile, boiling below 105° F. (40·5° C.), and gives off a very inflammable and very heavy vapour.

This product contains both Alcohol and Water, but Æther Purificatus (*see below*) is almost free from both.

**Solubility.**—1 in 10 of Water; mixes in all proportions with Alcohol (90 p.c.).

B.P. states that it is miscible in all proportions with Chloroform, but the mixture forms a turbid liquid, owing to the presence of Water in the Ether.

Water dissolves a tenth of its volume of Ether, and reciprocally Ether takes up about the same proportion of Water.

Æther dissolves Corrosive Sublimate, Red Mercuric Iodide, Iodine and Bromine freely, Sulphur and Phosphorus sparingly. It is also a solvent of the volatile and fixed oils, many resins and balsams, caoutchouc, and most of the organic vegetable alkaloids. It does not dissolve Potassium or Sodium Hydroxides, in which respect it differs from Alcohol.

**Medicinal Properties.**—It is a powerful diffusible stimulant, antispasmodic and carminative, and is of great use in syncope or heart-failure from any cause, dyspnœa,

gastral-gia, flatulence, spasmodic asthma and angina pectoris. It excites secretion from the mucous surfaces of the alimentary tract, and, as it stimulates the pancreas, it is sometimes given with Cod Liver Oil.

As an anæsthetic, see **Æther Purificatus** and **Æther Methylatus**.

**Dose.**—For repeated administration, 10 to 30 minims = 0·6 to 1·8 c.c.; for a single administration, 40 to 60 minims = 2·4 to 3·6 c.c.

When used hypodermically for heart failure the dose is 15 to 30 minims = 0·9 to 1·8 c.c.

**Prescribing Notes.**—*Best prescribed as Spirit of Ether, which mixes readily with Water. ‘Perles’ are prepared.*

**Official Preparations.**—**Æther Purificatus**, **Spiritus Ætheris**, **Spiritus Ætheris Compositus**. Used in the preparation of Collodium, Extractum Filicis Liquidum. **Æther Purificatus** is used in the preparation of Extractum Stophanthi, and **Spiritus Ætheris** in Tinctura Lobeliae **Ætherea**.

**Not Official.**—**Æther Methylatus** and **Spiritus Ætheris Muriaticus**.

Official in all the Foreign Pharmacopœias, sp. gr. varies from 0·720 to 0·728.

#### **ÆTHER PURIFICATUS. PURIFIED ETHER.**

A colourless, transparent, very volatile and inflammable liquid, almost free from Alcohol and Water, sp. gr. 0·720; boils at 95° F. (35° C.).

It is the **Æther pro narcosi** of the German and Swedish Pharmacopœias.

**Medicinal Properties.**—Used for producing general anæsthesia by inhalation.

It has also been used as a **spray** for obtaining local anæsthesia in minor surgery, and to relieve severe neuralgic pain, but as the lower the boiling point of the Ether the more complete is the anæsthesia, **Methylated Ether**, sp. gr. 0·717 (*see below*) is preferable for use with the **spray**.

Ether was first used as an anæsthetic for capital operations in 1846, and Purified Ether is preferred by some to Chloroform, as it has a less depressing effect upon the heart, vessels, and respiratory centre. It is used also in conjunction with Nitrous Oxide for minor operations in dentistry and surgery.

**Official Preparation.**—Used in the preparation of **Extractum Stophanthi**.

**SPIRITUS ÆTHERIS. SPIRIT OF ETHER.** The HOFFMANN'S ANODYNE of the Continental Pharmacopœias.

Ether, 1; Alcohol (90 p.c.), 2.

(1 in 3)

**Dose.**—For repeated administration, 20 to 40 minimis = 1·2 to 2·4 c.c.; for a single administration, 60 to 90 minimis = 3·6 to 5·4 c.c.

**Official in Austr., Dan., Ger., Hung., Jap., Norw., Swed. and Swiss,** 1 and 3; Belg. (*Æther Sulphuricus Alcoholicus*), 468 in 1000, sp. gr. 0·791 to 0·795; Dutch (*Æther cum Spiritu*), 1 and 1, sp. gr. 0·775 to 0·782; Fr. (*Ether Officinal Alcoolisé*), 1 and 1, sp. gr. 0·783; Ital. (*Liquore Anodino di Hoffmann*), 1 and 1; Mex. (*Licor de Hoffmann*), *Æther* 1, *Alcohol* 90 p.c., 1; Port. (*Ether Alcoolizado*), 7 and 3; Russ., 1 and 2, sp. gr. 0·800; Span. (*Eter Sulfurico Alcoholizado*), 4 and 1; U.S., 3½ in 10. All by weight, except U.S.

Dan., Norw. and Swed. include also *Æther Spirituosus Camphoratus*, containing 15 p.c. of Camphor.

**SPIRITUS ÆTHERIS COMPOSITUS. COMPOUND SPIRIT OF ETHER. B.P. Syn.—HOFFMANN'S ANODYNE.**

Ether, 5½; Alcohol (90 p.c.), 38; and an undefined quantity of Ethereal Liquid, obtained by the action of 36 of Sulphuric Acid on 40 of Alcohol (90 p.c.), and subsequent treatment.

The Official directions are founded on the formula of the old Dublin Pharmacopœia.

**Dose.**—For repeated administration, 20 to 40 minimis = 1·2 to 2·4 c.c.; for a single administration, 60 to 90 minimis = 3·6 to 5·4 c.c.

**Official in U.S., Ether, 325; Alcohol, 650; Ethereal Oil, 25.**

**Not Official.**

**ÆTHER FROM METHYLATED SPIRIT.**—Sp. gr. 0·717. It can be purified to such an extent by washing and redistillation as to be scarcely distinguishable from that made from Puro Spirit. The Methylic Ether being so extremely volatile is almost wholly lost during the purification.

An Ether, sp. gr. 0·715, can be obtained in limited quantity by careful working; occasionally samples are drawn over at 0·713, in cold weather.

**Medicinal Properties.**—It is largely employed as a spray for local anaesthesia, as well as for inhalation. As in the case of 'Methylated Chloroform,' the impurities from the Wood Spirit employed in the manufacture can be completely eliminated.

Ether can be made more volatile for use with the spray by the addition of 20 per cent. of a light Petroleum Ether.

Ether from Methylated Spirit, sp. gr. 0·720, washed and redistilled, is also supplied for inhalation. It is not so suitable as the above for the spray because it volatilises less rapidly.

**SPIRITUS ÆTHERIS MURIATICUS. Syn.—SP. SALIS DULCIS; CLUTTON'S FEBRIFUGE SPIRIT.**

A colourless liquid. Sp. gr. 0·860.

A very old preparation, still prescribed for feverishness.

**Dose.**—30 to 60 minims = 1·8 to 3·6 c.c.

**Official** in Dan. and Norw., Æther Chloratus Spirituosus; and Swiss, Spiritus Ætheris Chlorati, sp.gr. 0·838 to 0·842.

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## ÆTHER ACETICUS.

### ACETIC ETHER.

A transparent, colourless, volatile, inflammable liquid, possessing a characteristic odour and taste, consisting almost entirely of Ethyl Acetate,  $C_2H_5C_2H_3O_2$ , eq. 87·40. It should distil between 165° and 172° F. (73·9° and 77·8° C.). Sp. gr. B.P. 0·900 to 0·905; U.S.P. 0·893 to 0·895; the latter is the better of the two.

A good commercial specimen should contain over 90 p.c. of Ethyl Acetate.

**Solubility.**—About 1 in 9 of Water. Miscible in all proportions with Alcohol (90 p.c.), and with Ether.

**Medicinal Properties.**—Antispasmodic, stimulant, and carminative. It is also used as a sedative inhalation in irritation of the larynx, 30 minims in a pint of Water.

**Dose.**—For repeated administration, 20 to 40 minims = 1·2 to 2·4 c.c.; for a single administration, 60 to 90 minims = 3·6 to 5·4 c.c.

**Official Preparation.**—Used in the preparation of Liquor Epispasticus.

**Official** in all the Foreign Pharmacopœias.

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## ÆTHERIS NITROSI SPIRITUS.

*See* SPIRITUS ÆTHERIS NITROSI.

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Not Official.

## ÆTHYL BROMIDUM.

ETHYL BROMIDE. HYDROBROMIC ETHER.

$C_2H_5Br$ , eq. 108·17.

A heavy, colourless, mobile and very volatile liquid. It is best prepared by acting upon Potassium Bromide with Sulphuric Acid in the presence of Alcohol, as described in the French Codex. Pure Ethyl Bromidē boils at 101·3° F. (38·5° C.), and has sp. gr. 1·473. Its liability to decomposition may be pre-

vented by exclusion of light and air, and by the addition of Alcohol, which lowers the sp. gr.

Shown that the process recommended in the *Companion* (17th edit.), is the correct one. 60 p.c. of the commercial samples stated to be quite unfit for use.—*P.J.* '02, i. 491.

Sp. gr. is given in the Codex, 1·473; and in Ger., 1·453 to 1·457.

**Solubility.**—1 in 120 of Water, but will vary with sp. gr. of sample; it mixes in all proportions with Alcohol (90 p.c.) and Ether.

**Medicinal Properties.**—It is a local and general anaesthetic, more rapid in its action than Chloroform, and occasionally used in conjunction with it. It is useful in minor surgery, also in obstetric practice and in dental operations.

It should be administered in the same manner as Ether; it is very prompt in its action. It should not be given in prolonged operations or in renal disease. Has been used as a spray to produce local anaesthesia.—*L.M.R.* '80, 213; '87, 327; *T.G.* '85, 383; '86, 833; '87, 860; '91, 123; '92, 365, 399; *L.* '90, ii. 414; '92, ii. 103; *B.M.J.E.* '93, ii. 62; '94, i. 40.

Strongly recommended in dental operations.—*L.* '89, i. 848.

Recommended as a general anaesthetic in short operations. Action rapid, and particularly well adapted for children. Dangerous when administered with air, or if administration is protracted. Amount required varies up to 3 fl. dram. = 10·6 c.c.—*L.* '99, ii. 850; *B.M.J.* '02, ii. 589.

Administered by inhalation in a single dose of from 15 to 30 grammes was free from risk, but prolonged administration of repeated doses was dangerous. More than one warning, however, has been given that 30 grammes (6 fl. dram.) is too large and may occasionally give rise to unpleasant symptoms.—*L.* '03, ii. 745.

A solution, 1 in 200 of Water, in angina pectoris, dose  $\frac{1}{2}$  to 2 oz. = 14·2 to 56·8 c.c.—*M.A.* '87, 24.

Official in Fr., Éther Brômydrique; Dutch Supp.; Ger., Swed. and Swiss, Æther Bromatus; Ital., Bromuro di Etile; Mex., Eter Bromhidrico; Russ., Æthylum Bromatum.

**ÆTHYLENE BROMIDE**,  $C_2H_4Br$ .—A heavy, colourless, somewhat volatile liquid, obtained from the hydrocarbon Ethylene. Boils at 264·2° F. (129° C.), sp. gr. 2·17. Given in epilepsy.

**Dose.**—1 to 2 minims = 0·06 to 0·13 c.c., dissolved in oil.

Official in Dutch Supp.

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Not Official.

### ÆTHYL CHLORIDUM.

A colourless, ethereal, inflammable liquid, which boils at 12° C. (53·6° F.). It is supplied in glass capsules which are closed by a screw cap.

**Medicinal Properties.**—Used for producing local anaesthesia in minor surgery and dentistry, and as an analgesic in neuralgic and rheumatic pains.—*T.G.* '93, 387; '94, 119. See also Methyl Chloride.

Description of an apparatus for administering volatile anaesthetic agents, such as bromide and chloride of ethyl. A mask which hermetically seals the mouth and nose of patient.—*L.* '02, ii. 49. Caution required in the use thereof; such volatile bodies are depressants, and their capacity for danger culminates when mouth and nose are hermetically sealed.—*L.* '02, ii. 171.

A few cases of ethyl chloride narcosis. Its use recommended in place of nitrous oxide gas.—*L.* '01, i. 699; '01, ii. 123. Treatment of lupus with ethyl chloride.—*B.M.J.E.* '01, i. 76; *T.G.* '01, 603.

Review of 450 cases in which it was used as a general anaesthetic, with no trouble during narcosis ascribable to the drug itself.—*L.* '03, i. 952.

**Official in Dutch Supp. and Ital.**

**NARCOTILE** (Methylene bi-chloride).—A transparent, colourless, mobile, highly volatile and inflammable liquid. Introduced as a new general anaesthetic.—*L.* '03, i. 1091.

**SOEMNOFORM.**—Stated to be a mixture of Ethyl Bromide 1, Ethyl Chloride 12, and Methyl Chloride, 7; a rapid, safe and easily eliminated anaesthetic for use in dentistry.—*L.* '03, ii. 635; *P.J.* '03, i. 872.

**Kelene** is a proprietary article stated to consist of pure Ethyl Chloride, and put up in tubes fitted with patented automatic stoppers. Useful for producing local anaesthesia. For general anaesthesia it is put up in graduated tubes.

**Anæsthyl** and **Coryl** are stated to be mixtures of Ethyl and Methyl Chlorides.

### Not Official.

#### **ÆTHYL IODIDUM.**

**IODIDE OF ETHYL. HYDRIODIC ETHER.**

$\text{C}_2\text{H}_5\text{I}$ , eq. 154.72.

A colourless, volatile, heavy and non-inflammable liquid, with an agreeable ethereal odour and pungent taste. Sp. gr. 1.943. Boils at 72° C. (161.6° F.).

It soon acquires a reddish brown colour on exposure to light; but if no deeper than a pale wine colour it may be disregarded.

**Solubility.**—1 in 440 of Water; mixes in all proportions with Alcohol (90 p.c.).

**Medicinal Properties.**—Antispasmodic. It is used as an inhalation; 15 to 20 drops inhaled through the nose from a wide-mouthed bottle is more accurate and economical than drop-

ping it on a handkerchief. It is said not to weaken the digestive organs but rather to have a tonic effect. It has been inhaled with success to relieve the dyspnœa in chronic bronchitis and asthma; also in secondary and tertiary syphilis as an adjunct to the administration of Potassium Iodide, the Iodine being very rapidly absorbed into the system from this substance.—*Squibb*; *B.M.J.* '89, ii. 1216; *P.J.* (3) xix. 46.

**Prescribing Note.**—Can be obtained in glass capsules, 5 *minims* = 0·3 c.c. in each.

**Official in Fr., Ether Iodhydrique; Mex., Eter Yodhidrico.**

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### Not Official.

#### AGARICUS ALBUS.

**AGARIC OF THE LARCH. WHITE OR PURGING AGARIC.**

A species of mushroom, found growing on old Larches in Southern and Central Europe. As found in commerce, it is deprived of its outer coat, and is a light white spongy mass, easily rubbed to a powder on a sieve.

**Medicinal Properties.**—Has been used with success in night sweating of phthisis, checking cough and promoting sleep; also in haemoptysis. It has a strong cathartic action.—*Pr. xxix. 321; M.T.* '81, ii. 442; *T.G.* '88, 41, 371.

**Dose.**—5 to 30 grains = 0·32 to 2 grammes of the powder given in jam.

**Official in Belg., Fr., Ital. (Agarico Bianco), Mex. (Agarico Bianco), Port. (Agarico Branco), Span. and Swiss.**

**AGARICIN** (Agaricic Acid).—A white crystalline powder. Melts at 138° C. (280·4° F.).

**Solubility.**—1 in 140 of Alcohol (90 p.c.); practically insoluble in Water and in weak Alcohol.

**Dose.**— $\frac{1}{4}$  to  $1\frac{1}{2}$  grain = 0·016 to 0·1 gramme. Generally given with Dover's powder in a pill.

*Ph. Ger.* maximum single dose 0·1 gramme.

It should not be given hypodermically.—*L.M.R.* '84, 118.

In pill form  $\frac{1}{2}$  grain very successful in night sweats of phthisis.—*T.G.* '94, 627.

**Official in Dan., Dutch Supp., Ger., Ital., Mex. and Norw.**

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#### ALCOHOL ABSOLUTUM.

##### ABSOLUTE ALCOHOL.

A clear colourless, mobile liquid, possessing a spirituous odour, containing Ethyl Hydroxide,  $C_2H_5OH$ , eq. 45·70, with not more than 1 p.c., by weight, of Water; obtained by the

removal of Water from less strong Ethylic Alcohol and subsequent distillation. Sp. gr. 0·794 to 0·797. It is possible to rectify Alcohol up to 98 p.c.; beyond this dehydrating agents are necessary.

Official in Belg., Ital. and Span., sp. gr. 0·794; Ger., sp. gr. 0·796-0·800; Fr., sp. gr. 0·816; Swed., sp. gr. 0·795 to 0·800; Swiss, sp. gr. not higher than 0·800; Mex. (Alcohol Vinico), sp. gr. 0·790; U.S., sp. gr. not higher than 0·797.

**Official Preparations.**—Used in the preparation of Chloroform, Liquor Ethyl Nitritis, and Liquor Sodii Ethylatis.

**ALCOHOL** (90 p.c.).—This is described under the heading SPIRITUS RECTIFICATUS, as are also the weaker strengths of Alcohol, which are prepared from it.

### Not Official.

#### ALCOHOL METHYLICUM.

##### METHYLIC ALCOHOL.

*Syn.*—RECTIFIED PYROXYLIC SPIRIT.

A product of the destructive distillation of wood, which has been submitted to various processes of rectification.

A colourless liquid, with a peculiar odour. Sp. gr. about 0·803. Is not rendered turbid by admixture with water.

**Solubility.**—It mixes readily with Water, Ethylic Alcohol, Chloroform, and Ether. It dissolves Fats and volatile Oils.

**Medicinal Properties.**—Narcotic, sedative, and anti-emetic. It palliates the cough and lessens the febrile excitement of phthisis. It has been mixed with Chloroform for use as an anaesthetic (Regnault's Anæsthetic Mixture). See CHLOROFORM.

**Dose.**—5 to 10 minims = 0·3 to 0·6 c.c.

**Wood Spirit, Wood Naphtha, Pyroxylic Spirit** are names applied to the crude article of commerce, which may contain from 75 to 90 p.c. of real Methylic Alcohol.

**METHYLATED SPIRIT.**—See SPIRITUS METHYLATUS.

\***METHYLIC ETHER.**—It is gaseous at ordinary temperatures, but is condensed by cold and pressure to a liquid boiling at -20° C. (-4° F.). A solution of this in Ethylic Ether is useful for producing local anaesthesia.

### Not Official.

#### ALETRIS.

##### STAR GRASS. COLIC ROOT.

A perennial plant indigenous to U.S. The root was formerly included in the U.S. secondary list. It is stated to be useful as

a uterine tonic, and has been employed with asserted benefit in colic, dropsy, and in chronic rheumatism.

**EXTRACTUM ALETRIDIS LIQUIDUM (B.P.C.).**—A 1 in 1 fluid extract of the rhizome prepared by percolation. The Alcohol is removed by distillation from the last portion of the percolate, the residue is dissolved in the reserved portion, and sufficient of the menstruum (Alcohol 45 p.c.) added to produce the required volume.

**ELIXIR ALETRIDIS (B.P.C.).**—Fluid Extract of Aletridis, 1; Fluid Extract of Liquorice,  $\frac{1}{4}$ ; Tincture of Orange,  $\frac{1}{2}$ ; Syrup,  $1\frac{1}{2}$ ; Distilled Water, to yield 4.

**Dose.**—30 to 60 minims = 1·8 to 3·6 c.c.

## ALOES.

Both Aloe Barbadensis and Aloe Socotrina are Official. See below.

**Medicinal Properties.**—Bitter tonic, purgative, acting chiefly on the large intestine; the slowest of purgatives, taking ten to fifteen hours to act. Stomachic bitter in very small doses. Emmenagogue; a tonic cathartic in the constipation associated with amenorrhœa and anaemia. Should not be given during advanced pregnancy nor in inflammatory conditions of the pelvic organs. Small doses relieve, large doses aggravate haemorrhoids. Used as an enema it is anthelmintic.

The aqueous extract is more active than is the resinous portion of Aloes, and the Barbados Aloes, containing a larger amount than the Socotrine, is the more purgative; thus, 2 grains are equal to 3 grains of Socotrine.

**Dose.**—2 to 5 grains = 0·13 to 0·32 grammes.

**Prescribing Notes.**—Can be made into pills with a small quantity of diluted Alcohol; rarely prescribed alone.

1 grain with  $\frac{1}{2}$  grain Extract of Nux Vomica, is an excellent pill to obtain the stomachic effect, and to relieve habitual constipation. The Pilula Aloes et Ferri, and Pilula Aloes et Myrrhæ are given in amenorrhœa associated with chronic dyspepsia and constipation.

**Official Preparations.**—Of Barbados Aloes, Extractum Aloes Barbadensis, Pilula Aloes Barbadensis, Pilula Aloes et Ferri. Contained in Pilula Cambogiæ Composita, Pilula Colocynthidis Composita, and Pilula Colocynthidis et Hyoscyami. Used in the preparation of Aloinum. Of the Extract, Decoctum Aloes Compositum, Extractum Colocynthidis Compositum, Tinctura Aloes. Of Socotrine Aloes, Pilula Aloes et Asaefitidæ, Pilula Aloes et Myrrhæ, Pilula Aloes Socotrinae. Contained in Pilula Rhei Composita, Tinctura Benzoini Composita. Also used in the preparation of Aloinum.

**Not Official.**—Aloe Capensis, Decoctum Aloes Compositum 'Squire,' Pilula Aloes Diluta, Pilula Aloes et Belladonnae, Pilula Aloes et Nucis Vomicae, Pilula Aloini Composita, Pilulae Aperi-entes Stahlii, Pilulae Guttæ Aloeticæ, Tinctura Aloes Composita, and Tinctura Aloes et Myrrhae.

### ALOE BARBADENSIS. BARBADOS ALOES.

Obtained principally from the leaves of *Aloe vera* and *Aloe chinensis* in the West Indian Islands, and sold as Barbados or Curaçoa Aloes.

**Solubility.**—Water dissolves about 75 p.c. It is almost entirely soluble in Alcohol (60 p.c.).

**Dose.**—2 to 5 grains = 0·13 to 0·32 grammie.

Official in Belg., Fr., Port. and U.S.; Mex., Acibar.

### ALOE SOCOTRINA. SOCOTRINE ALOES.

Socotrine or Zanzibar Aloes, obtained from *Aloe Perryi* and other species. Imported principally through Bombay.

The real garnet-coloured, translucent Socotrine Aloes from *A. Perryi*, grown in Socotra, now seem to exist only as museum specimens. The only forms of Aloes now in commerce that represent the Socotrine Aloes of the B.P. are the opaque Hepatic Aloes and the sometimes slightly translucent Zanzibar Aloes.

**Solubility.**—Water dissolves about 50 p.c.; the residue is pretty well inert; almost entirely soluble in Alcohol (60 p.c.).

**Dose.**—2 to 5 grains = 0·13 to 0·32 grammie.

Official in Belg., Mex., Port., Span. (Acibar), and U.S.; U.S. has also *Aloe Purificata*, which is Socotrine Aloes dissolved in Alcohol and evaporated to dryness. Cape Aloes is Official in Aust., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Norw., Port., Russ., Span., Swed. and Swiss.

### ALOINUM. ALOIN.

A yellow crystalline powder, obtained chiefly from Barbados Aloes.

It may be assumed that commercial 'Aloin' is *a*-barbaloin. Its formula is  $C_{16}H_{16}O_7$ , with about three molecules of water of crystallisation, and its melting point when anhydrous 147° C.

**Solubility.**—1 in 120 of Water; 1 in 18 of Alcohol (90 p.c.); freely soluble in hot Water; nearly insoluble in Ether.

B.P. states sparingly soluble in cold Water, U.S.P. gives the figures as 1 in 60; 3 samples obtained (1903) from different manufacturers, yielded a solution at 1 in 120.

**Dose.**— $\frac{1}{2}$  to 2 grains = 0·03 to 0·13 grammie.

**Prescribing Note.**—Generally given in pills or in cachets with other ingredients. ‘Diluted Glucose’ is a good excipient for Aloin in pills.

**Not Official.**—Pilula Aloini Composita.

**Official in U.S.**

**DECOCTUM ALOES COMPOSITUM. COMPOUND DECOCTION OF ALOES. N.O. Syn.—BAUME DE VIE.**

An aqueous solution prepared by boiling together for five minutes Extract of Barbados Aloes 1, Myrrh  $\frac{1}{2}$ , Potassium Carbonate  $\frac{1}{2}$ , Extract of Liquorice 4, and Distilled Water 40. Immediately after the boiling is finished add Saffron  $\frac{1}{2}$ , and, when the liquid has cooled down, Compound Tincture of Cardamoms 30, and more Distilled Water to make 100 of product. (1 of Extract in 100)

**Dose.**— $\frac{1}{2}$  to 2 fl. oz. = 14·2 to 56·8 c.c.

**DECOCTUM ALOES COMPOSITUM ‘SQUIRE.’**—Made with Socotrine Aloes and the Fluid Extract of Liquorice.

**Dose.**— $\frac{1}{2}$  to 2 fl. oz. = 14·2 to 56·8 c.c.

The fluid extract is much better than the solid extract for covering the taste of Aloes; there is a marked difference in the taste of the two preparations, even when they practically contain the same amount of Liquorice. This suggestion has been adopted in B.P. in the case of Tincture of Aloes, but not in that of the Compound Decoction where it is of more importance.

**EXTRACTUM ALOES BARBADENSIS. EXTRACT OF BARBADOS ALOES.**

An aqueous Extract, of which about  $\frac{3}{4}$  grain is equal to 1 grain of the Aloes.

**Dose.**—1 to 4 grains = 0·06 to 0·26 grammes.

Extract of Aloes is **Official in Austr., Belg., Dan., Dutch, Ger., Hung., Ital., Nørw., Russ., Swed., Swiss and U.S.**

**PILULA ALOES BARBADENSIS. PILL OF BARBADOS ALOES.**

4 of the pill is about equal to 2 of Barbados Aloes, 1 of Hard Soap,  $\frac{1}{8}$  of Oil of Caraway, and 1 of Confection of Roses.

**Dose.**—4 to 8 grains = 0·26 to 0·52 grammes.

**PILULA ALOES SOCOTRINÆ. PILL OF SOCOTRINE ALOES.**

4 of the pill is about equal to 2 of Socotrine Aloes, 1 of Hard Soap,  $\frac{1}{8}$  of Oil of Nutmeg, and 1 of Confection of Roses.

**Dose.**—4 to 8 grains = 0·26 to 0·52 grammes.

Official in Belg., Dutch Supp., Fr., Jap. and U.S., Aloes, 1, Soap, 1; Mex., Aloes 10, Soap 2; Swiss, Aloes 10, Soap 1.

**PILULA ALOES ET ASAFTIDÆ.** PILL OF ALOES AND ASAFTIDA.

4 of the pill is about equal to 1 of Socotrine Aloes, 1 of Asafetida, 1 of Hard Soap, and 1 of Confection of Roses.

**Dose.**—4 to 8 grains = 0·26 to 0·52 grammie.

**Official in U.S.,** 1 in 3; Belg. and Span., Pilulæ Fulleri, made with Aloes, Asafetida and other ingredients.

**PILULA ALOES ET FERRI.** PILL OF ALOES AND IRON.

4½ of the pill is about equal to 1 of Barbados Aloes, ½ of Exsiccated Ferrous Sulphate, 1½ of Compound Powder of Cinnamon, and 1½ (by weight) of Syrup of Glucose.

**Dose.**—4 to 8 grains = 0·26 to 0·52 grammie.

**Official in U.S.,** Purified Socotrine Aloes 1, Exsiccated Ferrous Sulphate 1, Aromatic Powder 1, Confection of Roses q.s.; Dutch Supp., Cape Aloes 1, Exsiccated Ferrous Sulphate 1; Ger., Capc Aloes 1, Exsiccated Ferrous Sulphate 1, Sp. Saponis q.s.; Jap., Aloes 3, Ferrous Sulphate 5, Spirit q.s.; Swiss, Aloes 5, Ferrous Sulphate 5, Soap 1, Glycerin q.s.

**PILULA ALOES ET MYRRHÆ.** PILL OF ALOES AND MYRRH.

4½ of the pill is about equal to 2 of Socotrine Aloes, 1 of Myrrh, and 1½ (by weight) of Syrup of Glucose.

A similar pill, containing also Saffron, was called Pil. Rufi in 1557.

**Dose.**—4 to 8 grains = 0·26 to 0·52 grammie.

**Official in Austr., Belg., Port. and U.S.,** with Aromatic Powder in place of Saffron; Dutch Supp., with Saffron.

**TINCTURA ALOES.** TINCTURE OF ALOES.

Extract of Aloes, 1; Liquid Extract of Liquorice, 6; Alcohol (45 p.c.), q.s. to make 40. (1 Extract in 40)

**Dose.**—1½ to 2 fl. dram. = 5·4 to 7·1 c.c.; when repeated, ½ to 1 fl. dram. = 1·8 to 3·6 c.c.

**Official in Belg.,** 1 in 5; Dutch, Fr., Ger., Ital., Russ., Span., Swiss, 1 and 5; Hung. and Port., 15 in 100; U.S., 1 in 10. All are by weight, except U.S.

**Not Official.**

**ALOE CAPENSIS** (Cape Aloes).—A translucent variety.

**Official in all the Foreign Pharmacopœias.**

**DECOCTUM ALOES COMPOSITUM ‘SQUIRE.’**—See p. 68.

**PILULA ALOES DILUTA.**—Marshall Hall's Pill. Barbados Aloes 4, dissolve in water and strain; then add Extract of

Liquorice 4, Treacle 4, thinly sliced Hard Soap 4; mix and evaporate to a pilular consistence.

**Dose.**—3 or 4 grains = 0·2 or 0·26 gramme.

**PILULA ALOES ET BELLADONNÆ.**—Extract of Aloes, 1 grain; Extract of Belladonna,  $\frac{1}{4}$  grain.

**PILULA ALOES ET NUCIS VOMICÆ.**—Extract of Aloes, 1 grain; Extract of Nux Vomica,  $\frac{1}{4}$  grain.

**PILULA ALOINI COMPOSITA.**—Aloini, Extract Nucis Vomicæ, Ferri Sulphatis, Pulv. Myrrhæ, Saponis, ana  $\frac{1}{2}$  grain.—*L.* '87, i. 2.

**PILULÆ APERIENTES STAHLII (Swed.).**—Extract Aloes, 6; Extract Rhei Co., 3; Reduced Iron, 2; Rad Althææ, 2; Alcohol (64 p.c.) and Simple Syrup, q.s. to make 100 pills.

**PIL. GUTTÆ ALOETICÆ (Swed.).**—Aloes, 7; Camboge, 3; Gum Arabic, 3; Galbanum, 4; Carvone, 1·5; Syrup, q.s. to make 100.

**TINCTURA ALOES COMPOSITA.** *Syn.*—ELIXIR AD LONGAM VITAM.

*Austr. Add.*—Aloes, 30; Gentian, 5; Rhubarb, 5; Zedoary, 5; Saffron, 5; Alcohol (60 p.c.), 1000.

*Fr.*—Aloes, 20; Agaric, 2·5; Gentian, 2·5; Rhubarb, 2·5; Zedoary, 2·5; Saffron, 2·5; Electuarium Theriacale, 2·5; Alcohol (60 p.c.), 1000.

*Ger.*—Aloes, 30; Gentian, 5; Rhubarb, 5; Zedoary, 5; Saffron, 5; Alcohol (68 p.c.), 1000.

*Russ.*—Aloes, 45; Gentian, 5; Rhubarb, 5; Saffron, 5; Alcohol (70 p.c.), 1000.

All are by weight.

**TINCTURA ALOES ET MYRRHÆ (U.S.).**—Purified Aloes, 1; Myrrh, 1; Powdered Liquorice Root, 1; Alcohol (94 p.c.) 75, and Water 25, mixed, q.s., to make 10.

## ALSTONIA.

The dried bark of *Alstonia Scholaris*, and of *Alstonia Constricta*. Infusum Alstoniæ (1 in 20), dose  $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 c.c.; and Tincture Alstoniæ (1 in 8), dose 30 to 60 minims = 1·8 to 3·6 c.c.; are Official in *Ind.* and *Col. Add.* for India and the Australian and Eastern Colonies.

## Not Official.

### ALTHÆÆ RADIX.

#### MARSHMALLOW ROOT.

The root of *Althæa officinalis*, which is very mucilaginous. When decorticated and dried it is used as a powder in the preparation of lozenges and pill masses.

**Medicinal Properties.**—It is much employed on the Continent as a demulcent in irritation and inflammation of the mucous membranes of the mouth and pharynx.

**Official** in all the Foreign Pharmacopœias. Fr. (Guimauve).

The two substances **Asparagin** and **Betain** have been extracted from Althæa root.—*P.J.* '98, i. 116.

**Asparagin** dissolves Mercuric Oxide, but the Oxide must be freshly precipitated. A solution is best prepared by precipitating Mercuric Chloride solution, washing the precipitated Oxide and dissolving it in solution of Asparagin. The solution has been employed as a hypodermic injection in the treatment of syphilis.—*P.J.* '00, ii. 775.

**DECOCTUM ALTHÆÆ.**—Althæa Root, 1; Water, 30; boil to 20.

**SYRUPUS ALTHÆÆ.**—Macerate 3 of Althæa Root in 40 of Water for twelve hours; strain, press, and filter until 32 have passed through; to this add 64 of Sugar, dissolve warm, and heat the Syrup to boiling; when cold, skim and strain through flannel.

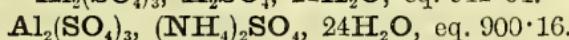
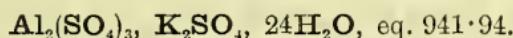
**Official** in all the Foreign Pharmacopœias.

**TROCHISCI ALTHÆÆ.**—About 1 grain in each lozenge. Demulcent. Valuable after excision of tonsils or uvula.

**Official** in Austr., Fr., and Ital.; Mex., Pastillas de Altea.

## ALUMEN.

### ALUM.



Both salts are official. Potash Alum (Aluminium and Potassium Sulphate), and Ammonia Alum (Ammonium and Aluminium Sulphate). They are practically alike in appearance, occurring in large colourless crystalline masses.

**Solubility.**—1 in 11 of Water; 3 in 1 of boiling Water; Potash Alum, 1 in 3 of Glycerin; Ammonia Alum, 1 in  $1\frac{1}{4}$  of Glycerin. Insoluble in Alcohol (90 p.c.).

Alum when heated melts in its own water of crystallisation.

**Medicinal Properties.**—Astringent, used as a **gargle** or **spray** for relaxed throat, 10 grains in 1 oz. of Water; as an **injection** in leucorrhœa and gonorrhœa, 60 grains in a pint of Water; as a **nasal douche**, 4 grains in 1 oz. of Water; as a **snuff** in epistaxis, 6 grains mixed with 1 grain of Starch; as a **lotion** in purulent ophthalmia, 2 to 6 grains in 1 oz. of Water. 10 to 15 grains three times a day have been given for internal haemorrhage, such as that of typhoid or gastric ulcer, also for menorrhagia, and in cases of lead poisoning;

arrests excessive secretion in dysentery, diarrhoea and night sweats; vomiting caused by the cough of phthisis is sometimes checked by 6 to 10-grain doses of Alum. A saturated solution in Water forms an excellent styptic for haemorrhage, leech bites, bleeding haemorrhoids, epistaxis, etc.; the glycerin of alum is used in inflamed tonsils. 60 grains have been recommended as an emetic in croup. Dried Alum is escharotic, used for warty growths and to stimulate indolent ulcers, to destroy exuberant granulations and to remove naevi.

**Dose.**—5 to 10 grains = 0·32 to 0·65 grammes.

**Prescribing Note.**—*Mostly used in aqueous or Glycerin solution.*

**Incompatibles.**—Alkalies and their Carbonates, and Tannic Acid.

**Official Preparations.**—Glycerinum Aluminis, Alumen Exsiccatum.

**Not Official.**—Alum Rose Gargle, Gossypium Aluminis, Aluminium Acetate Solution, Aluminium Aceto-Tartrate, Aluminium Chloride, Aluminium Nitrate, Aluminium Naphthol-Sulphonate, Aluminium Oleate, and Aluminium Sulphate, Pulvis pro Pedibus.

**Official in all the Foreign Pharmacopoeias.** All use Potash Alum only.

### GLYCERINUM ALUMINIS. GLYCERIN OF ALUM.

Powdered Alum, 1 oz.; Distilled Water, 3 fl. drm.; Glycerin *q.s.* to make 6 oz.: (1 in 6)

Pure Alum should and does dissolve clear in Glycerin, but commercial Pulv. Aluminis, as a general rule, will not dissolve without residue except after prolonged boiling.

A powerful local astringent. When diluted with Water it forms a useful gargle.

Sometimes prescribed with an equal quantity of Glycerin of Tannic Acid.

### ALUMEN EXSICCATUM. EXSICCATED ALUM. *Syn.*—ALUMEN USTUM.

Potash Alum, deprived of its Water by Heat. It yields about 55 p.c. of product.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Norw., Port., Russ., Span., Swiss and U.S.**

### Not Official.

**ALUM ROSE GARGLE.**—Broken rose petals, 3 drm.; Diluted Sulphuric Acid, 3 fl. drm.; cold Distilled Water, 10 fl. oz.; digest for two hours, and strain 8 fl. oz.; then add Alum, 2 drm.; Sugar, 4 drm.; Alcohol (90 p.c.), 4 fl. drm.; dissolve. This kept well for seven years. To be mixed with an equal bulk of Water before use.

**GOSSYPIUM ALUMINIS.**—Contains about 30 p.c. of Alum.

**ALUMINIUM ACETATE SOLUTION** (*Austr., Dutch Supp., Ger., and Russ.*).—A clear colourless liquid, with an acid reaction and a faint odour of Acetic Acid; obtained by double decomposition between Aluminium Sulphate and Calcium Acetate. Sp. gr. 1·044 to 1·048. Contains 7½ to 8 p.c. Aluminium Acetate.

*Swiss*, sp. gr. 1·058. Contains 10 p.c.

It is also known as **Burow's Solution**.

A good antiseptic, preferred by some to Carbolic Acid for dressing lacerated wounds.—*T.G.* '85, 727; '86, 573.

**ALUMINIUM ACETO-TARTRATE.**—Crystals soluble in their own weight of Water. **Official in Dutch Supp.**

A powerful, non-poisonous antiseptic; also an astringent caustic.

A solution has been sold under the name **Alsol**.—*P.J.* '01, i. 665.

A solution containing 10 p.c. is **Official in Swiss**.

30 to 60 grains in a pint of Water makes a useful **gargle or douche**.—*L.M.R.* '86, 433; *L.* '88, i. 339.

**ALUMINIUM CHLORIDE.**—A colourless, crystalline mass, giving off fumes of Hydrochloric Acid Gas, and becoming damp on exposure to air. The commercial product forms a crystalline powder, chiefly of a yellow colour owing to the presence of Iron as an impurity.

**Dose.**—5 to 8 grains = 0·32 to 0·52 gramme.

The use of Aluminium Chloride in doses of 5 grains = 0·32 gramme, and upwards several times a day has proved remarkably efficacious in locomotor ataxy.—*L.* '99, ii. 1826.

**Hydrated Aluminium Chloride** is **Official in Russ.**

Under the names of **Chloralum** and **Chloralum Powder**, preparations containing Aluminium Chloride have been introduced as disinfectants.

**ALUMINIUM CHLORIDE SOLUTION.**—Obtained by dissolving Aluminium Hydrate in Hydrochloric Acid. A pale yellow liquid. Sp. gr. 1·250. **Gargle**, 12 minims to 1 oz. of Water; **Spray**, 3 minims to 1 oz.; **Paint**, 15 minims to 1 oz. Astringent and antiseptic.

**ALUMINIUM NITRATE.**—A solution (4 or 6 grains in 1 oz. of Water) has been used with success in pruritus vulvæ.

**ALUMINIUM NAPHTHOL-SULPHONATE** (*Alumnol*).—A whitish powder, readily soluble in Water, introduced as an antiseptic. —*P.J.* (3) xxiii., 605; *C.D.* '93, i. 94.

In treatment of metrorrhagia. Used as an intra-uterine injection, with Tincture of Iodine.—*M.A.* '00, 408.

**Dose.**—4 to 8 grains = 0·26 to 0·52 gramme, as an astringent.

**Official in Dutch Supp.**

**ALUMINIUM OLEATE.**—A powder. Mixed with equal parts of

Lard, is used as a styptic and antiseptic, in checking the mucopurulent discharges in eczema.—*L.* '84, ii. 123.

**ALUMINIUM SULPHATE.**—White crystalline cakes, or in a white powder, soluble 1 in 1 of Water. Insoluble in Alcohol (90 p.c.). Astringent and antiseptic.

Official in Austr., Dan., Dutch Supp., Ger., Russ. and Swed.

**PULVIS PRO PEDIBUS (Swiss).**—Alum (Potash), 15; Talc, 85.

**Aluminium Caseinate.** A yellowish white, tasteless powder. Insoluble in Water. Introduced as an intestinal astringent.

**Dose.**—5 grains = 0·32 gramme.—*P.J.* '01, ii. 297.

**Salumin Insoluble** (Alumiuum Salicylate), **Salumin Soluble** (Alumiuum and Ammonium Salicylate), **Alkasal** (Aluminium Potassium Salicylate), **Boral** (Aluminium Borotartrate), **Cutol** (Aluminium Borotannate), are preparations containing Aluminium, which have been noticed in medical literature.

**CIMOLITE.**—The mineral has yielded on analysis: Alumina, 23; Silica, 63; Ferric Oxide, 1·25; Water, 12.

A proprietary Toilet article, which is a silicate in very fine powder, is sold under the name "Cimolite."

**FULLER'S EARTH** has yielded on analysis: Alumina, 10; Silica, 53; Lime, 0·5; Magnesia, 1·25; Ferric Oxide, 9·5; Water, 24.

**SOAPSTONE, Creta Gallica**, is a Silicate of Aluminium and Magnesium. Is used in prurigo and as a dusting powder for infants, alone or mixed with equal parts of Zinc Oxide or Calamine.

## AMMONIACUM.

### AMMONIACUM.

A gum-resin, obtained from *Dorema Ammoniacum* and probably other species.

It is collected in Persia.

**Solubility.**—Sparingly in Water, but forms with it a nearly white emulsion; when 50 grains were digested in 2 oz. of Alcohol (90 p.c.), 40 grains were dissolved; with Alcohol (60 p.c.), 30 grains were dissolved.

**Medicinal Properties.**—Antispasmodic, stimulant, expectorant; useful in chronic bronchitis and asthma of old people, either in mixture or in pill; as a plaster to promote absorption in chronic synovitis and glandular swellings.

**Dose.**—5 to 15 grains = 0·32 to 1 gramme.

**Prescribing Notes.**—Generally given as *Mistura Ammoniaci*; may be combined with *Tincture of Squill*, or *Fetid Spirit of Ammonia*.

**Official Preparations.**—*Emplastrum Ammoniaci cum Hydrarygo* and *Mistura Ammoniaci*. Contained also in *Emplastrum*

Galbani, in Pilula Scillæ Composita, and Pilula Ipecacuanhæ cum Scilla.

**Not Official.**—Pilulæ Ammoniaci Opiatæ (*Swed.*), Emplastrum Gummi Resinosum.

**Official** in all the Foreign Pharmacopœias. Fr., purified by 60 p.c. Alcohol.

**EMPLASTRUM AMMONIACI CUM HYDRARGYRO.** *See HYDRARGYRUM.*

As the value of this preparation depends chiefly upon tho Mercury it contains, the formula is given under Hydrargyrum.

**MISTURA AMMONIACI.** AMMONIACUM MIXTURE.

Ammoniacum in coarse powder,  $\frac{1}{4}$  oz.; Syrup of Tolu, 4 fl. drm.; Distilled Water,  $7\frac{1}{2}$  fl. oz. (1 in 32)

**Dose.**— $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 c.c.

**Official** in Span. (Emulsion), 1 in 36 with White Wine; U.S. (Emulsium Am.), 1 in 25.

**Not Official.**

**PILULÆ AMMONIACI OPIATÆ** (*Swed.*)—Ammoniacum, 10; Myrrh, 5; Squills, 2; Opium, 1; Water, *q.s.* to make 100 pills.

**EMPLASTRUM GUMMI RESINOSUM.**—Is official in *Dan.*, *Norw.* and *Swiss.* The two former contain 6 p.c. of Ammoniacum, and the latter 10 p.c. Made with Emplastrum Plumbi.

## AMMONIÆ LIQUOR FORTIS.

### STRONG SOLUTION OF AMMONIA.

A transparent, colourless, very alkaline liquid, containing 32·5 p.c. by weight of Ammonia,  $\text{NH}_3$ , eq. 16·94. Sp. gr. 0·891.

**Medicinal Properties.**—Usually given in the more diluted form of Liquor Ammoniæ; *see below.*

**Official Preparations.**—Of **Liquor Ammoniæ Fortis**, Liquor Ammoniæ, Spiritus Ammoniæ Fetidus. Contained in Linimentum Camphoræ Ammoniatum, Linimentum Hydrargyri and Tinctura Guaiaci Ammoniata. Used in the preparation of Ammonii Benzoas, Ammonii Bromidum, Ammonii Phosphas, Spiritus Ammoniæ Aromaticus, and Spiritus Ammoniæ Fetidus. Of the **Liquor Ammoniæ**, Linimentum Ammoniæ. Contained in Tinctura Ergotæ Ammoniata, Tinctura Opii Ammoniata, Tinctura Quininæ Ammoniata, Tinctura Valerianæ Ammoniata. Used in the preparation of Liquor Bismuthi et Ammonii Citratis, and the scale preparations of Iron.

**Not Official.**—Alcohol Ammonia, Lotio Crinalis and Tinct. Ammon. Comp. (Eau de Luce).

**Antidotes.**—Acetic Acid or Vinegar well diluted with Water; demulcent drinks.

**Official in** Belg. (Ammonia Liquida), sp. gr. 0·935, 17 p.c.; Fr. (Ammoniaque Liquide), sp. gr. 0·925; Ital. (Ammoniaca), sp. gr. 0·925, 20 p.c.; Mex. (Ammonioco), sp. gr. 0·920; Port. (Ammonia Liquida), sp. gr. 0·916; Span. (Amoniaco Liquido), sp. gr. 0·923; U.S. (Aqua Ammoniæ Fortior), sp. gr. 0·901, 28 p.c.; *see also* Liquor Ammoniæ.

### **LIQUOR AMMONIÆ. SOLUTION OF AMMONIA.**

A liquid, sp. gr. 0·959, containing 10 p.c. by weight of Ammonia,  $\text{NH}_3$ ; prepared by mixing 1 of strong solution of Ammonia with 2 of Distilled Water.

**Medicinal Properties.**—A general stimulant, antacid, and antispasmodic; relieves nervous headache, and is useful in pneumonia, bronchitis, and dyspepsia. Stimulant in exhausted states of the system. Externally (applied to the nostrils) in syncope; an excellent application to the sting of a wasp or the bites of insects. On the skin it is a powerful rubefacient, and in embrocations it is used as a counter-irritant for pains and stiffness of joints, etc. Was at one time used by injection as an antidote to snake bites, but Potassium Permanganate is now considered a better antidote.

**Dose.**—10 to 20 minims = 0·6 to 1·2 c.c., well diluted.

**Prescribing Note.**—*Ammonia is more generally prescribed internally in the form of Spiritus Ammoniæ Aromaticus, but in cases of great depression or exhaustion the Liquor, diluted with twice its volume of water, is injected into a vein.*

**Official Preparations.**—Linimentum Ammoniæ. Used in the preparation of Ammonii Benzoas, Ferri et Ammonii Citras, Ferri et Quininæ Citras, Ferrum Tartaratum, Liquor Bismuthi et Ammonii Citratis, Tinctura Opii Ammoniata, Tinctura Quininæ Ammoniata.

**Official in** Austr., Dan., Ger., Hung., Jap., Norw., Russ., Swed., Swiss and U.S. (Aqua Ammoniæ), 10 p.c., sp. gr. 0·960; Dutch, sp. gr. 0·958 to 0·960; Belg., Fr., Ital., Port., Span., and U.S., *see Ammon. Liq. Fort.*

### **LINIMENTUM AMMONIÆ. LINIMENT OF AMMONIA.**

Solution of Ammonia, 1; Almond Oil, 1; Olive oil, 2.  
Mix by shaking. (1 in 4)

Cotton Seed, Sesame and Nut Oils have each been recommended, but Cotton Seed is the only Oil which makes a satisfactory and permanent Emulsion.

A counter-irritant.

**Official in** Austr., Dutch and Ital., 1 and 4 Olive Oil; Belg. and Fr., 1 and 9 Almond Oil; Ger., Liq. Am. 1, Olive Oil 3, Poppy Oil 1; Hung. and Jap., 1 and 4 Sesame Oil; Mex., 1,

Sesame Oil 9; also 1, Sesame Oil 4; Port., 1 and 4 Almond Oil; Russ., Liq. Am. 1, Olive Oil 3, Sesame Oil 1; Span., 1 and  $7\frac{1}{2}$  Olive Oil; Swed., 1 and 3 Olive Oil; Swiss, 1 and 3 Poppy or Sesame Oil; U.S., Am. 35, Alcohol 5, Cotton Seed Oil 60. All are by weight, except U.S.

**SPIRITUS AMMONIÆ AROMATICUS.** See AMMONII CARBONAS.

**SPIRITUS AMMONIÆ FETIDUS.** FETID SPIRIT OF AMMONIA.

Asafetida,  $1\frac{1}{2}$ ; strong Solution of Ammonia, 2; Alcohol (90 p.c.), to make 20. ( $1\frac{1}{2}$  in 20)

Nervine stimulant and antispasmodic, useful in the treatment of hysteria.

**Dose.**—For repeated administration, 20 to 40 minims =  $1\cdot2$  to  $2\cdot4$  c.c.; for a single administration, 60 to 90 minims =  $3\cdot6$  to  $5\cdot3$  c.c.

#### Not Official.

\* **ALCOHOL AMMONIA.**—Absolute Alcohol saturated with Ammonia Gas. It contains about 14 p.c. of  $\text{NH}_3$ . Sp. gr. 0·858.

It is used in filling and renovating Smelling Salt bottles.

**Official** in Dutch Supp.

**LOTIO CRINALIS.**—Ol. Amygdal, 1 fl. oz.; Liq. Ammon. Fort., 1 fl. oz.; Sp. Rosmar., 4 fl. oz.; Aq. Mellis, 2 fl. oz.

**TINCT. AMMON. COMP.**—EAU DE LUCE.—Mastic, 2 drm.; Alcohol (90 p.c.), 9 fl. drm.; Ol. Lavand, 14 minims; Liquor Ammoniæ Fortis, 20 fl. oz.

Stimulant, antispasmodic. Used in tropical countries as an application to snake bites.

**Dose.**—5 to 10 minims = 0·3 to 0·6 c.c., in Water.

## AMMONII BENZOAS.

AMMONIUM BENZOATE.

$\text{NH}_4\text{C}_7\text{H}_5\text{O}_2$ , eq. 138·07.

Fine, white laminar crystals, or a crystalline powder, odourless or possessing a faint odour of Benzoin, and a saline taste. It gradually loses Ammonia on exposure to air.

**Solubility.**—1 in 6 of Water; 1 in 22 of Alcohol (90 p.c.); 1 in 8 of Glycerin.

It will not quite dissolve 1 in 5 of Water, as sometimes stated.

**Medicinal Properties.**—Diuretic, antiseptic, antipyretic and expectorant. Is valuable in chronic vesical catarrh with alkaline urine, phosphatic deposit, and in

chronic bronchial catarrh with much secretion. Employed in dropsy, in gout and in cases of uric acid deposit. It is more soluble than Benzoic Acid, and therefore should be preferred, and is less irritant to the alimentary canal.

An intestinal antiseptic in typhoid.—*M.A.* '94, 555.

**Dose.**—5 to 15 grains = 0·32 to 1 grammes.

**Prescribing Note.**—Usually given in solution.

**Incompatibles.**—Acids, Liquor Potassæ, and Ferric salts.

**Official in Fr., Mex. Port., Russ., Swiss and U.S.**

### Not Official.

#### AMMONII BORAS.

A crystalline salt, with an alkaline reaction.

**Solubility.**—1 in 15 of Water.

**Medicinal Properties.**—Has been used with success in renal and vesical calculi.

For renal colic, 20 grains = 1·3 grammes, every two hours until free passage of urine takes place, then 15 grains = 1 grammes, three times a day.—*T.G.* '87, 623.

#### AMMONII BROMIDUM.

##### AMMONIUM BROMIDE.

$\text{NH}_4\text{Br}$ , eq. 97·29.

Small, colourless and odourless prismatic crystals, or a white crystalline powder.

**Solubility.**—1 in 1½ of Water; and measures 2; 1 in 15 of Alcohol (90 p.c.).

**Medicinal Properties.**—An excellent nervine sedative and depressant, hypnotic and anaphrodisiac, especially useful for sleeplessness, the result of worry or mental anxiety and fatigue; in epilepsy, in acute alcoholism, in acute mania and nymphomania, and in many other conditions in which the Potassium salt is used. Not so apt to produce Bromism as the Potassium salt, and less depressing. Relieves headache and neuralgic pain. Sedative in pharyngeal and laryngeal irritation; especially useful in whooping-cough and asthma.

**Dose.**—5 to 30 grains = 0·32 to 2 grammes.

**Incompatible.**—Spirit of Nitrous Æther.

**Official in Austr., Dan., Dutch, Fr., Ger., Ital., Jap., Mex., Norw., Russ., Swiss and U.S.**

## Not Official.

**LOZENGES**, containing 2 grains = 0·13 grammes, of Ammonium Bromide in each. Useful in whooping-cough.

**Dose.**—1 to 3 lozenges.

**AMMONII CARBONAS.**

## AMMONIUM CARBONATE.

A mixture of Ammonium Hydrogen Carbonate,  $\text{NH}_4\text{HCO}_3$ , with Ammonium Carbamate,  $\text{NH}_4\text{NH}_2\text{CO}_2$ .

**Solubility.**—1 in 4 of Water; 1 in 200 of Alcohol (90 p.c.); 1 in 5 of Glycerin.

**Medicinal Properties.**—Stimulant, antacid, diaphoretic, antispasmodic and expectorant. Frequently combined with Ipecacuanha in acute and chronic bronchitis when the phlegm is tough and scanty. Employed in all those conditions described under Liquor Ammoniæ; much used as a general stimulant. Rarely as an emetic in  $\frac{1}{2}$  dram doses.

Has been recommended in full and continuous doses in cholera, in the place of alcoholic stimulants.—*B.M.J.* '85, ii. 380.

**Dose.**—3 to 10 grains = 0·2 to 0·65 grammes.

**Prescribing Note.**—15 grains dissolved in Water are taken with 17 grains of Citric Acid to form a saline draught.

**Incompatibles.**—Acids, Acid salts, Iron salts, Lime Water, and salts of the alkaline earths and of the alkaloids.

**Official Preparations.**—Used in the preparation of Ammonii Chloridum, Bismuthi Carbonas, Ferri Carbonas Saccharatus, Liquor Ammonii Acetatis, Liquor Ammonii Citratis, and Spiritus Ammoniæ Aromaticus.

**Not Official.**—Spiritus or Liquor Ammonii Anisatus, Liquor Volatilis Cornu Cervi or Spirit of Hartshorn, Hartshorn and Oil, and Ammonium Bicarbonate.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss. and U.S.**

**SPIRITUS AMMONIÆ AROMATICUS.** AROMATIC SPIRIT OF AMMONIA. *B.P. Syn.*—SPIRITUS AMMONIÆ COMPOSITUS. SPIRIT OF SAL VOLATILE.

**Medicinal Properties.**—Similar to those mentioned under Ammonium Carbonate. A domestic remedy for nervous headache, more useful when combined with Ammonium Bromide.

**Dose.**—20 to 40 minims = 1·2 to 2·4 c.c., for repeated administration; for a single administration, 60 to 90 minims = 3·6 to 5·3 c.c.

Official in Dutch Supp. (*Spiritus Aromaticus Ammoniacalis*), Jap., and U.S., a *mixture*, Fr. (*Alcoolat Aromatique Ammoniacal*) and Port., *distilled*.

### LIQUOR AMMONII ACETATIS. SOLUTION OF AMMONIUM ACETATE.

1 of Ammonium Carbonate dissolved in 10 of Distilled Water, neutralised with Acetic Acid, and diluted with Distilled Water to make 20.

This dilute solution is now prepared direct from Ammonium Carbonate as recommended in the *Companion* 1894, and the concentrated solution is omitted.

**Medicinal Properties.**—Diaphoretic and slightly antipyretic. Much used in febrile disease. Given in full doses for Alcoholism. A mixture of this medicine with Spirit of Nitrous Ether forms one of the oldest remedies for fever, and, there being no risk of its producing collapse, one of the safest.

**Dose.**—2 to 6 fl. drm. = 7·1 to 21·3 c.c.

**Incompatibles.**—Potassium and Sodium Hydroxides, and alkaline Carbonates.

Official in Austr., sp. gr. 1·030; Belg. and Port., sp. gr. 1·029; Fr. and Span., sp. gr. 1·036; Russ., 1·032 to 1·034; Mex., and U.S.; all made with Carbonate. Ital., 1·034; Jap., 1·033; Dan. and Norw., sp. gr. 1·035 to 1·040; Dutch, Ger., Hung. and Swiss., sp. gr. 1·032 to 1·034; all made with Caustic Ammonia.

### LIQUOR AMMONII CITRATIS. SOLUTION OF AMMONIUM CITRATE.

Citric Acid 5, dissolved in Distilled Water 25, neutralised with Ammonium Carbonate, and diluted with Distilled Water to make 40.

**Medicinal Properties.**—Similar to Liquor Ammonii Acetatis.

**Dose.**—2 to 6 fl. drm. = 7·1 to 21·3 c.c.

Not Official.

### SPIRITUS or LIQUOR AMMONII ANISATUS.

Austr., Ital. and Span.—Oil of Anise, 1; Alcohol, 24; Solution of Ammonia, 5.

Ger.—Anethol, 1; Alcohol, 24; Solution of Ammonia, 5.

Belg., Hung. and Russ.—Oil of Anise, 1; Alcohol, 24; Solution of Ammonia, 6.

Dan., Norw. and Swed.—Oil of Anise, 1; Alcohol, 32; Solution of Ammonia, 7.

Dutch.—Oil of Anise, 1; Alcohol, 19; Solution of Ammonia, 5.

Swiss.—Oil of Anise, 3; Alcohol, 77; Solution of Ammonia, 20.

All by weight.

**LIQUOR VOLATILIS CORNU CERVI, or SPIRIT OF HARTSHORN.**—Solution of Carbonate of Ammonia of the old Pharmacopœias, distilled from Hartshorn; but is now more generally represented by Liquor Ammoniæ *B.P.*

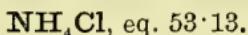
**HARTSHORN AND OIL.**—1 of Sp. Hartshorn and 3 of Oil of Almonds.

**AMMONIUM BICARBONATE.**—White, crystalline powder. Soluble 1 in 5 of water, insoluble in Alcohol (90 p.c.) It is formed when Aminonium Carbonate is exposed to the air. Employed in powders and pastilles as a substitute for Ammonium Carbonate.

## AMMONII CHLORIDUM.

### AMMONIUM CHLORIDE.

*N.O.Syn.*—AMMONIUM CHLORATUM; CHLORETUM AMMONICUM.



White, odourless crystalline powder.

**Solubility.**—1 in 3 of Water; 1 in 55 of Alcohol (90 p.c.)

**Medicinal Properties.**—Stimulating expectorant in bronchitis by inhalation, or by allowing it to dissolve slowly in the mouth in the form of lozenge or tablet; is a hepatic, gastric, intestinal and nervous stimulant, diaphoretic, diuretic and alterative. In neuralgia, lumbago and migraine, in doses of 20 to 30 grains three times a day, it frequently relieves after four or five doses. Useful in sciatica, gout and chronic rheumatism; in acute and chronic congestion of the liver; said to counteract the tendency to albuminoid degeneration.

Recommended in advanced cases of pulmonary phthisis to facilitate expectoration.—*L.* '95, ii. 1524.

**Dose.**—5 to 20 grains = 0·32 to 1·3 grammes.

**Prescribing Notes.**—Generally taken in solution; can be dispensed in the form of mixtures, powders, or Compressed Tablets. Lemon and Chloroform make it more palatable. See below, *Haustus*.

*Fluid Extract of Liquorice has been recommended, but many persons object to the taste of Liquorice.*

10 grains in a claret-glassful (3 fl. oz.) of cold Water, sipped frequently, allays distressing fits of coughing in bronchitis.

The vapour is also largely employed in naso-pharyngeal and custachian catarrh; various kinds of inhalers have been introduced for mixing the vapours of Hydrochloric Acid and Ammonia. In the absence of such an inhaler, heat a small quantity of the solid salt in any convenient dish over a spirit lamp and inhale the fumes.

**Incompatibles.**—Alkalies and their Carbonates; alkaline earths; Lead and Silver salts.

**Official Preparation.**—Used in the preparation of *Liquor Ammoniae Fortis*.

**Not Official.**—Draught, Lotion and Lozenges.

**Official** in all the Pharmacopœias.

#### Not Official.

**HAUSTUS AMMONII CHLORIDI.**—Ammonii Chloridi, gr. xv.; Tinct. Limon., ℥<sup>xlv.</sup>; Sp. Chloroformi, ℥<sup>x.</sup>; Aquæ, ad ʒiss.

**LOTIO AMMONII CHLORIDI.**—1 oz. with 1 fl. oz. Alcohol (90 p.c.) and 10 fl. oz. Water. Vinegar is sometimes added, to be applied as a dressing for bruises.

**LOZENGES.**—2 grains = 0·13 grammes, in each, are much used for bronchitis.

**Dose.**—2 to 4 lozenges.

#### Not Official.

### **AMMONII IODIDUM.**

#### **AMMONIUM IODIDE.**

A white granular deliquescent salt, or in cubical crystals, readily becoming yellow on exposure to air.

When deeply coloured, it is advisable in dispensing to remove the colour by shaking it in a bottle with a piece of Ammonium Carbonate. It has been pointed out that the resulting Iodate would be decomposed by the Hydrochloric Acid of the stomach, and result in the re-formation of free Iodine; but as the quantity would generally be very small it may be disregarded.

**Solubility.**—4 in 3 of Water; 1 in 3 of Alcohol (90 p.c.); 3 in 4 of Glycerin.

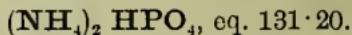
**Medicinal Properties.**—Similar to the Potassium Iodide, but less depressing.

**Dose.**—2 to 5 grains = 0·13 to 0·32 grammes, three times a day; but much larger doses can be given.

**Official** in Dutch Supp., Fr., Port., Russ., Span., Swiss and U.S.

### **AMMONII PHOSPHAS.**

#### **AMMONIUM PHOSPHATE.**



White, odourless, glistening, prismatic crystals, having a saline taste.

**Solubility.**—1 in 2 of Water, and measures 2½; insoluble in Alcohol (90 p.c.).

A salt corresponding to the official formula has been stated by some authorities to have a solubility of 1 in 0·76; the true figure, however, for the normal B.P. salt is 1 in 2, and this figure was given in the 1st edition of the *Companion* to the 15th (1890). —C.D. '03, i. 944; P.J. '03, i. 65.

**Medicinal Properties.**—Cholagogue, nervine stimulant, diaphoretic. Given in chronic rheumatism and in the gouty and uric acid diathesis to render the Sodium Biurate more soluble.

**Dose.**—5 to 20 grains = 0·32 to 1·3 grammes.

**Prescribing Notes.**—It is given 3 or 4 times a day in Water, but should not be prescribed in too condensed a form when tinctures form part of the mixture, on account of its sparing solubility in spirituous menstrua.

**Official in Port.**

**Not Official.**

**AMMONIUM SALICYLATE.**—Colourless, odourless, crystalline powder, or in odourless white needle-shaped crystals. It may be prepared with either the natural or the physiologically pure Salicylic Acid. Antipyretic and antirheumatic, but is superseded by the Sodium salt.

**Dose.**—5 to 15 grains = 0·32 to 1 gramme.

**Official in Russ.**

**AMMONIUM VALERIANATE.**—Colourless, deliquescent, flat prismatic crystals, possessing a strong odour of Valerianic Acid.

Readily soluble in Water and Alcohol; soluble in Ether.

Stated to be useful in hysteria, epilepsy and neuralgia.

**Dose.**—1 to 3 grains = 0·065 to 0·2 grammes, several times daily. Given in form of pills or in solution.

**Official in Fr., Swiss and U.S.**

**AMMONIUM VALERIANATUM SOLUTUM** (Liquor Ammonii Pierlot), **Swiss.**—Valerianic Acid, 3; Extract Valerian, 2; Water, 95; Ammonium Carbonate, sufficient to neutralise.

In hysteria and epilepsy, 6 to 30 drops in sweetened Water. Given in the form of the above solution in the treatment of the morphine habit.—*L. '01, ii. 363.*

## AMYGDALA AMARA.

### BITTER ALMOND.

The ripe Seed of *Prunus amygdalus, var. amara.*

Introduced only as a source of Almond Oil, of which it yields from 42 to 44 p.c., and from which the commercial product is chiefly obtained.

**Official** in all the Foreign Pharmacopœias except Dutch and Jap.; Fr., Amandes Amères; Ital., Mandorle; Port., Amendoas Amargas; Mex. and Span., Almendro Amargo.

**Not Official.**—Aqua Amygdalæ Amaræ, Mistura Amygdalæ Amaræ, Oleum Amygdalæ Amaræ Essentiale, and Oleum Amygdalæ Essent. Persic.

### AMYGDALÆ OLEUM. ALMOND OIL.

The oil expressed from the Bitter or Sweet Almond.

The yield is between 40 and 45 p.c.

**Solubility.**—Only slightly soluble in Alcohol (90 p.c.), entirely soluble 1 in  $2\frac{1}{4}$  of Ether, and in all proportions of Chloroform.

**Medicinal Properties.**—Emollient, demulcent and laxative. As an enema in impaction of faeces or obstruction of bowel, 1 to 3 pints.

**Dose.**—1 to 4 fl. dram. = 3·6 to 14·2 c.c.

**Prescribing Notes.**—1 fl. oz. of Oil, with  $\frac{1}{2}$  fl. oz. Mucilage,  $\frac{1}{2}$  oz. Sugar, and 6 fl. oz. of Distilled Water, makes a nice cough mixture.

A mixture of equal parts of this Oil and Lime Water, with a small proportion of Glycerin, scented with Lemon, has been commonly sold under the title Glycerin and Lime Juice.

**Official Preparations.**—Contained in Linimentum Ammoniæ, Oleum Phosphoratum, Unguentum Aquæ Rosæ, and Unguentum Cetacei.

Used in preference to Olive Oil, as it makes a whiter ointment and is less liable to become rancid.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital. (Olio di Mandorle Dolci), Jap., Norw., Port., Russ., Mex., Span. (Aceite de Almendras Dulces), Swed., Swiss and U.S.**

### Not Official.

**AQUA AMYGDALÆ AMARÆ.**—Prepared by crushing Bitter Almonds and expressing the fixed Oil, and then distilling the residual cake with Water so that it shall contain the proper quantity of Hydrocyanic Acid ordered in any particular Pharmacopœia.

*Ph. Ger.* maximum single dose, 2 grammes; maximum daily dose, 6 grammes.

\***Official in Austr. and Dan. (Conc.), 0·1 p.c., (Dil.) 0·005 p.c. Hydrocyanic Acid; Ger., Hung., Ital., Russ., Swed. and Swiss, 0·1 p.c.; Norw., 0·1 p.c.; Port., not standardised; Span., 0·083 p.c.; U.S., not standardised, 1 Volatile Oil in 1000.**

**MISTURA AMYGDALÆ AMARÆ.**—Made in the same proportions as Mistura Amygdalæ.

Useful in cough, and as a lotion to allay itching of the skin. It was a favourite vehicle for giving Tartarated Antimony, in doses of  $\frac{1}{2}$  grain = 0·008 gramme, as a sedative expectorant in the first stage of acute bronchitis or pneumonia. The mixture contains a variable amount of Hydrocyanic Acid.

**Dose,**— $\frac{1}{2}$  to  $1\frac{1}{2}$  fl. oz. = 14·2 to 42·6 c.c.

**OLEUM AMYGDALÆ AMARÆ ESSENTIALE.**—A volatile Oil, obtained from Bitter Almonds by macerating with Water the cake from which the fixed Oil has been expressed, and subsequent distillation.

A clear, colourless or pale yellowish, highly refractive liquid, with a characteristic odour.

Sp. gr. 1·060 to 1·070 (after removal of Hydrocyanic Acid 1·045 to 1·050).

**Solubility.**—Sparingly in Water; mixes in all proportions with Alcohol (90 p.c.) and Ether.

**Official in Belg., Fr., Mex., Port. and U.S.**

U.S. has also Spiritus Amygdalæ Amaræ, 1 in 100.

Chiefly used as a flavouring agent, when the oil 'sine Acido Hydrocyanico' should be employed.

**ÖL Amydal. Essent. Persic.** is prepared by a similar process to Bitter Almond Oil, from the kernels of the Apricot and Peach.

## AMYGDALA DULCIS.

### SWEET ALMOND.

The ripe Seed of *Prunus amygdalus, var. dulcis.*

Commonly known as the Jordan Almond.

**Medicinal Properties.**—Demulcent and nutrient. Biscuits are made of Jordan and Valencia Almonds for diabetic patients, as a substitute for bread or starchy food. Almonds do not contain starch.

The Mistura Amygdalæ is a good vehicle for cough medicines.

**Official Preparations.**—Mistura Amygdalæ and Pulvis Amygdalæ Compositus.

**Official in all except Dutch; Fr., Amandes Douces; Ital., Mandorle; Mex., Almendra Dulce; Port., Amendoas Doces; Span., Almendro Dulce.**

## MISTURA AMYGDALÆ. ALMOND MIXTURE.

Compound Powder of Almonds, 1; Distilled Water, 8.

**Dose.**— $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 c.c.

**Official as Emulsio** in Austr., Belg., Dan., Fr., Ger., Hung., Ital., Norw., Port., Span., Swed. and Swiss; U.S., Emulsum A. Mex., Emulsion simple. Swed. has also Emulsio Hydrocyanata —Amygdalin, 1; Almond Emulsion, 80.

## PULVIS AMYGDALÆ COMPOSITUS. COMPOUND POWDER OF ALMONDS.

Sweet Almonds, 8; Powdered Refined Sugar, 4; Powdered Gum Acacia, 1. Remove the skins of the Almonds after

softening them in Water, and dry the Almonds by a cloth and exposure to the air until brittle (*Comp.* 1894), so that they will rub to a paste which is not too moist and with which the Sugar and Gum, previously mixed, can be incorporated to form a moderately coarse powder.

**Dose.**—60 to 120 grains = 4 to 8 grammes.

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## AMYL NITRIS.

### AMYL NITRITE.

A pale yellow, volatile liquid, with an ethereal odour. Sp. gr. 0·870 to 0·880. It consists principally of Iso-Amyl Nitrite,  $C_5H_{11}NO_2$ , eq. 116·25 ; which is present in variable quantity, together with other Nitrites. Should be stored in amber-coloured, well-stoppered bottles.

**Solubility.**—Insoluble in Water. Soluble in Alcohol (90 p.c.), Ether and Chloroform.

**Medicinal Properties.**—Antispasmodic. Very useful in angina pectoris, aneurismal pain, dyspnœa of bronchitis and spasmodic asthma ; has been used with advantage in epilepsy, in trifacial neuralgia, in migraine and sea-sickness, and hemicrania, if these conditions be accompanied by facial pallor ; also in laryngeal spasm, in hepatic, intestinal and renal colic, in spasmodic forms of dysmenorrhœa and in eclampsia ; a restorative in cardiac failure from Chloroform anæsthesia or other cause ; has been found useful as an antidote to Strychnine.

As Iso-butyl Nitrite has a much more powerful physiological action than a pure Amyl Nitrite, the latter would have a milder action than the Official Nitrite, but more prolonged. In angina, where a rapid fall of arterial tension is required, the B.P. article is best, but in other cases, such as Bright's disease, when the effect is required to be prolonged, the pure Nitrite is the more effective. As some persons are peculiarly susceptible to its action, it use demands caution.

A description of 77 cases of pneumonia treated by the inhalation of large doses.—*B.M.J.E.* '95, ii. 96 ; *T.G.* '96, 49.

**Dose.**—For inhalation, the vapour of 2 to 5 minims = 0·12 to 0·3 c.c.

**Prescribing Notes.**—*It can be obtained in small glass capsules covered with cotton wool and silk.*

*In mixtures to be swallowed, dose,  $\frac{1}{2}$  to 1 minim dissolved in*

*Alcohol (90 p.c.) and diffused through Water by means of Trajancanth (in powder) 2 grains to the fl. oz; to be used with caution.*

*Should be handled carefully, as even smelling the liquid in a bottle causes violent flushings.*

**Not Official.**—Iso-butyl Nitrite, Tertiary Amyl Nitrite, and Amyl Valerianate.

**Official** in Austr., Belg., Dutch Supp., Fr., Ger., Hung., Ital., Jap., Mex., Russ., Swed., Swiss and U.S.

### Not Official.

**ISO-BUTYL NITRITE.**—Its action and uses are similar to those of Amyl Nitrite.

**TERTIARY AMYL NITRITE** (Bertoni's Ether).—Prepared from tertiary Amylic Alcohol (Amylene Hydrate). It possesses all the properties of the Official Nitrite, but it can be taken in larger quantities without danger, and it does not cause flushing of the face.—*P.J.* (3) xix. 161, 485.

The tertiary Nitrites have a more powerful influence generally than the secondary or primary.—*P.J.* (3) xxv. 313.

**Dose.**—5 drops on sugar, or in capsules.

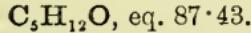
**AMYL VALERIANAS.**—A colourless liquid, possessing a strong fruity odour. Sedative and antispasmodic.

**Dose.**—2 to 3 minims = 0·13 to 0·2 c.c. in capsules.

### Not Official.

#### AMYLENE HYDRATE.

**TERTIARY AMYLC ALCOHOL. DIMETHYL-ETHYL CARBINOL.**



A clear, colourless, oily liquid, with a strong characteristic odour and taste.

Ger. and Norw. give the sp. gr. 0·815 to 0·820, and boiling point 99° to 103° C.

A sample examined by us had sp. gr. 0·812; boiled at 212° F. (100° C.); crystallised at 5° F.

**Solubility.**—1 in 8 (or rather less) of Water; in all proportions of Alcohol (90 p.c.)

**Medicinal Properties.**—Hypnotic. Has no unpleasant after-effects, and its taste is less objectionable than that of Paraldehyde. Successful in mania (especially morphinomania, *M.A.* '94, 426), delirium tremens, and in severe forms of epilepsy where bromides are found useless.

Recommended where hypnotics are required for a long period.—*Y.B.T.* '94, 74.

1½ grammes Amylene Hydrate repeated in two hours gave

six hours' uninterrupted sleep in a case recovering from the morphia habit.—*L.* '01, ii. 366.

**Dose.**—30 to 60 minims = 1·8 to 3·6 c.c.

**Prescribing Notes.**—*Dissolved in Water or Alcohol (90 p.c.) ; also given in capsules ; sometimes given as an enema.*

*Cannot be employed subcutaneously owing to pain produced.—B.M.J.E. '94, ii. 64.*

Official in Dutch Supp., Ger. and Norw.

## AMYLUM.

### STARCH.

A white, odourless, tasteless, impalpable powder, or irregular, angular or columnar masses ; procured from the Fruits or grains of wheat, *Triticum sativum* ; maize, *Zea Mays*, and rice *Oryza sativa*.

**Medicinal Properties.**—Protective, absorbent. A good application to the skin when irritable or inflamed, or in trivial burns. It has been given in powder for diarrhoea, and as an antidote for iodine poisoning, followed by an emetic. Mucilage of Starch, 1 in 40, is useful for preparing enemas. In the form of Violet Powder, which is merely perfumed Starch, it is useful to prevent the chafing and excoriation of the skin of infants. Glycerin of Starch is a good application for chilblains and chapped hands.

**Official Preparations.**—Glycerinum Amyli. Used in the preparation of Pulvis Tragacanthæ Compositus.

**Not Official.**—Test Solution of Starch.

Official in Austr., Belg., Dan., Ger., Hung., Ital., Jap., Norw., Port., Russ., Span. and Swed. ; Fr., Amidon ; all Wheat Starch. Dutch, Potato Starch ; Dutch Supp., Rice and Wheat Starch ; Port. allows several other Starches ; Swiss, Rice and Wheat Starch ; U.S., Maize Starch.

## GLYCERINUM AMYLI. GLYCERIN OF STARCH.

Starch, 1 ; Glycerin, 6½ ; Distilled Water, 1½ : stir them together whilst sufficient heat is applied to burst the Starch granules, and form a homogeneous mass.

The operation should be conducted as quickly as possible, to avoid excessive loss of water ; and to prevent carbonisation from overheating, the use of an oil-bath is recommended.

This formula has been altered in each successive edition of B.P. In 1867 the formula was Starch 1, Glycerin 8 ; in 1885, Starch 1, Glycerin 5, Distilled Water 3 ; and the proportions are now as that given above.

U.S. (Glyceritum Amyli), Starch 1, Water 1, Glycerin 8.

## Not Official.

**TEST SOLUTION OF STARCH.**—Made with Potato Starch, 1 p.c. is a convenient strength. It can be preserved almost indefinitely, as a sensitive reagent for Iodine, by boiling it in a sterilising flask, both openings being previously plugged with cotton wool.

A solution of this strength in equal parts of Glycerin and Water, after filtration or decantation from the insoluble cellulose envelopes, will keep bright for years.

## Not Official.

**ANALGEN.**

A white crystalline powder, inodorous and tasteless. Melts at 208° C.

This is similar in chemical composition and properties to Phenacetin, but with the Phenol ring replaced by the Quinoline ring.

**Solubility.**—Insoluble in Water; sparingly soluble in cold, more so in hot Alcohol; fairly soluble in Chloroform; almost insoluble in Ether.

**Medicinal Properties.**—Has been recommended in neuralgia, hemicrania and bronchitic asthma, but it is not without unpleasant effects; the urine is frequently coloured red; toxic action and dangers.—*B.M.J.* '98, ii. 1055.

It has given relief in sciatica.—*M.A.* '94, 9; *B.M.J.E.* '93, ii. 87; *M.P.* '94, 621; *L.* '97, i. 1227.

**Dose.**—7½ to 15 grains = 0·5 to 1 grammie.

**Prescribing Notes.**—Usually given in cachets, or Compressed Tablets.

Official in Dutch Supp.

**ANETHI FRUCTUS.****DILL FRUIT.**

The dried ripe Fruit of the *Peucedanum graveolens*.

Cultivated in Britain or imported from Central and Southern Europe.

**Medicinal Properties.**—Stimulant, aromatic, and carminative; chiefly given to children in cases of flatulency, or hiccup; sometimes given with Sodium Bicarbonate.

**Official Preparations.**—Aqua Anethi and Oleum Anethi.

Official in Fr. (Aneth); Mex. (Eneldo); Port. (Endro).

**AQUA ANETHI. DILL WATER.**

Dill Fruit, 1; Water, 20; distil, 10.

(1 in 10)

**Dose.**— $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 c.c.; for children, 60 minims = 3·6 c.c.

### OLEUM ANETHI. OIL OF DILL.

The Oil distilled from Dill Fruit.

Yield, 2·8 to 3 p.c.

**Solubility.**—Readily soluble in Alcohol and Ether.

**Dose.**— $\frac{1}{2}$  to 3 minims = 0·03 to 0·18 c.c.

Contains a terpene (Limonene) together with Carvone, but no Anethol.

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Not Official.

### ANILINE.

C<sub>6</sub>H<sub>5</sub>N, cq. 92·40.

An oily liquid, sp. gr. 1·020 to 1·026, colourless when freshly distilled, but very prone to become yellow or brown on exposure to air.

**Solubility.**—1 in 27 of Water; 5 in 4 of Alcohol (60 p.c.); mixes in all proportions with Alcohol (90 p.c.), Ether and Glycerin.

As a vehicle for dissolving Cocaine, for the production of local anaesthesia of the ear, 10 to 15 minims of a 5 p.c. solution of Cocaine made by dissolving Cocaine Hydrochloride 5 in dilute Alcohol 50, Aniline Oil 50.—*L.* '00, i. 1125; '01, i. 698.

**Dose.**—Not more than 7 minims = 0·5 c.c.—*L.* '00, i. 1127.

Several cases of poisoning from boots to which a black material containing an Aniline dye had recently been applied.—*L.* '02, i. 463.

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### ANISI FRUCTUS.

ANISE FRUIT.

The dried ripe Fruit of *Pimpinella Anisum*.

**Medicinal Properties.**—Stimulant, aromatic and carminative, slightly expectorant; used to relieve flatulence, and to diminish the griping of purgative medicines.

**Official Preparations.**—Aqua Anisi and Oleum Anisi.

Official in all the Foreign Pharmacopeias except Jap.

### AQUA ANISI. ANISE WATER.

Anise Fruit, 1; Water, 20; distil, 10. (1 in 10)

Official in Belg., from Oil and Alcohol; Fr., Port. and Span., from Fruits; U.S., from Oil.

**Dose.**— $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 c.c.

### OLEUM ANISI. OIL OF ANISE.

At temperatures above 15° C. it is a colourless or pale yellow refractive liquid, with a pleasant aromatic odour and taste; below 15° C. it becomes a white crystalline solid. It is obtained by distillation from the fruits of the official variety, or from the fruit of *Illicium Verum* or Star-anise. Sp. gr. 0·975 to 0·990 at 20° C. (68° F.).

**Solubility.**—1 of Pimpinella Oil in 3 of Alcohol (90 p.c.); 1 of Illicium Oil in 4 of Alcohol (90 p.c.); a slight rise in temperature greatly increases the solubility in Alcohol (90 p.c.); both oils dissolve in all proportions of Absolute Alcohol; 1 of Pimpinella Oil in 200 of Alcohol (60 p.c.), at which point the Illicium Oil is distinctly turbid.

These variations in solubility seem to arise from the presence in the Illicium Oil of a small proportion of a much less soluble Oil, which is absent in the Pimpinella.

**Dose.**—½ to 3 minims = 0·03 to 0·18 c.c.

**Prescribing Note.**—*May be taken on sugar.*

**Official Preparation.**—Spiritus Anisi. Contained in Tinctura Camphoræ Comp. and Tinctura Opii Ammoniata.

**Not Official.**—Tinctura Anisi, Anisic Acid, Sodium Anisate and Anethol.

**Official** in the following from **Pimpinella**: Austr., Belg., Dan., Dutch, Fr., Hung., Ital., Mex., Norw., Port., Russ., Span., Swiss and U.S. The following permit the use of both kinds: Belg., Mex. and Port.

### SPIRITUS ANISI. SPIRIT OF ANISE.

Oil of Anise, 1; Alcohol (90 p.c.), q.s. to make 10. (1 in 10)

**Dose.**—5 to 20 minims = 0·3 to 1·2 c.c.

Half the strength of B.P.'85.

**Official** in Belg., 1 Oil in 100; Fr., 1 Oil in 50; U.S. 1 Oil in 10; Austr., 1 of Fruits in 6; Span., 1 of Fruits in 6 (distilled). All by weight, except U.S.

### Not Official.

**TINCTURA ANISI** (Fr., Ital., Mex. and Russ.).—Anise Fruit, 1; Alcohol, 5.

**ANISIC ACID** ( $H_2C_8H_7O_3$ ).—It occurs in colourless, shining acicular crystals obtained by the oxidation of Oil of Anise or Anethol.

**Solubility.**—Almost insoluble in cold Water; 1 in 700 boiling Water; 1 in 36 of Alcohol (90 p.c.); 1 in 50 of Ether.

**SODIUM ANISATE.**—In rhombic crystals, or a crystalline powder, frequently efflorescent, with a slight aromatic odour.

**Solubility.**—1 in 5 of Water; 1 in 24 of Alcohol (90 p.c.).

Anisic Acid and its Sodium salt have been stated to possess antiseptic and antipyretic properties, similar to Salicylic Acid.

**Dose.**—5 to 15 grains = 0·32 to 1 grammes.

**ANETHOL** ( $C_{10}H_{12}O$ ).—The Stearoptene separated from either of the Anise Oils. It is said to have a finer flavour than the Oil, being free from the acridity pertaining to the non-freezing portion of the Oil. Sp. gr. 0·984 to 0·986 at 25° C.; melting point, 20° to 21° C. (70° F.); boiling point, 232° to 234° C.

Official in Ger. and Swed.

## ANTHEMIDIS FLORES.

### CHAMOMILE FLOWERS.

The dried expanded Flower-heads of the common or Roman Chamomile, *Anthemis nobilis*.

**Medicinal Properties.**—Tonic, aromatic and stomachic. In large doses, emetic. The infusion taken early every morning is useful in atonic dyspepsia; externally it is employed as a fomentation for bruises and contusions.

**Prescribing Notes.**—*The Extract or Oil is frequently added to Rhubarb and aperient medicines as a corrective. A little Soap added in the case of the Oil makes a good mass.*

**Official Preparations.**—Extractum Anthemidis, and Oleum Anthemidis. The Oil is contained in the Extract.

**Not Official.**—Aqua Anthemidis, Oleum Chamomillæ Infusum, and Tinctura Anthemidis.

**Official in Austr., Belg., Dan., Dutch, Fr., Ital., Port., Span. (Manzanilla), Swiss and U.S.** Also Matricaria in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Norw., Russ., Span. (Manzanilla Comun), Swed., Swiss and U.S. Mex., both varieties.

### EXTRACTUM ANTHEMIDIS. EXTRACT OF CHAMOMILE.

An aqueous extract of the Flowers treated by decoction, to which Oil of Chamomile is added just before completion of the evaporation.

The double Flowers yield about 30 p.c. of Extract.

**Dose.**—2 to 8 grains = 0·13 to 0·52 grammes.

Official in Belg., from Anthemis; Fr. and Ital., from both; Dan. and Swed., from Matricaria; Mex.

### OLEUM ANTHEMIDIS. OIL OF CHAMOMILE.

A light blue oily liquid, of an aromatic pleasant odour and balmy taste; distilled from the dried Flowers of *Anthemis Nobilis*. On exposure to light and air the oil acquires a greenish or yellowish-brown colour. Sp. gr. 0·905 to 0·915.

**Solubility.**—Sparingly in Water; 10 in 3 of Alcohol (90 p.c.).

**Dose.**— $\frac{1}{2}$  to 3 minims = 0·03 to 0·18 c.c.

Official in Span., from Anthemis; Fr., from Anthemis and Matricaria; Belg., Ital. and Swiss, from Matricaria.

### Not Official.

**AQUA ANTHEMIDIS.**—Flowers 1, Water 20, distil 10. (1 in 10) Official in Austr. and Dan., 1 in 10; Dan., also Conc., 1 in 1; Belg. 1 in 5; Dutch Supp., 3 in 10, also Conc., 1 in 1; Fr., Port. and Span., 1 in 4; Ital., Matricaria, 1 in 2; Anthemis, 1 in 2 $\frac{1}{2}$ . All distilled. Belg., Port. and Span., from Anthemis; Austr., Dan. and Dutch, from Matricaria; Fr. and Ital., from both.

**OLEUM CHAMOMILLÆ INFUSUM.**—Chamomile Flowers, 1; Olive Oil, 10; digest in a water-bath for 2 hours, strain, press and filter.

Official in Fr. and Port., 1 in 10; Span., 1 in 8; from Anthemis. Belg., 1 in 10; Ital., 1 in 4; from Matricaria.

**TINCTURA ANTHEMIDIS.**—Single Chamomiles carefully dried, 1; sufficient Alcohol (90 p.c.) to percolate, 8; or an equivalent quantity of fresh Flowers (about 3), and macerate with 8 of Alcohol (90 p.c.) for 7 days, and press.

The moisture in the fresh flowers reduces the strength of the spirit so that less resin is dissolved, and the tincture is consequently less bitter.

Official in Austr., 1 in 5 (Matricaria); Ital., 1 in 5 from both.

## ANTIMONIUM NIGRUM PURIFICATUM.

### ANTIMONIOUS SULPHIDE.

A heavy, inodorous, greyish-black crystalline powder, consisting of native Antimonious Sulphide  $Sb_2S_3$ , eq. 333·46, separated from siliceous material by fusion, and from arsenical compounds by treatment with Ammonia solution.

**Official Preparation.**—Used to prepare Antimonium Sulphuratum.

Official in Austr. (Crude), Belg., Dan., Fr., Ger., Ital. (Crudo and Depurato), Mex., Port., Swed., Swiss and U.S.

## ANTIMONIUM SULPHURATUM. SULPHURATED ANTIMONY. N.O.Syn.—KERMES MINERAL. STIBIUM SULFURATUM AURANTIACUM.

An orange-red, odourless, tasteless powder, which consists of a mixture of Antimony Penta- and Tri-sulphides and Oxides, and containing also some free Sulphur. It should be preserved from the light.

**Solubility.**—Insoluble in Water; dissolves readily in Caustic Soda solution, also in hot Hydrochloric Acid.

**Medicinal Properties.**—Alterative, diaphoretic, and emetic; uncertain in action from its slight solubility, depending on the acidity of the stomach. Usually prescribed with Calomel and Guaiacum, as in Pilula Hydrargyri Subchloridi Composita, as a cholagogue in gout; for secondary syphilis and its cutaneous eruptions; or with Henbane or Hemlock in chronic rheumatism.

**Dose.**—1 to 2 grains = 0·06 to 0·13 grammes.

**Official Preparation.**—Contained in Pilula Hydrargyri Subchloridi Composita.

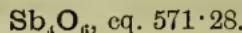
**Official in Austr., Belg., Dutch., Fr., Ger., Hung., Jap., Mex., Norw., Port., Russ., Span., Swiss and U.S.**

#### Not Official.

**LIQUOR ANTIMONII CHLORIDI.**—A yellowish-red liquid, sp. gr. about 1·47. A powerful escharotic.

### ANTIMONII OXIDUM.

#### ANTIMONIOUS OXIDE.



A white, more or less crystalline, powder.

**Solubility.**—Insoluble in Water, Alcohol, and Nitric Acid; readily dissolved by Hydrochloric Acid and warm solution of Tartaric Acid.

**Medicinal Properties.**—Similar to, but less active than the Tartrate, because less soluble.

**Dose.**—1 to 2 grains = 0·06 to 0·13 grammes.

**Prescribing Notes.**—*The Pulvis Antimonialis is generally given in the form of powders, pills or cachets.*

**Official Preparations.**—Pulvis Antimonialis. Used in the preparation of Antimonium Tartaratum.

**Official in Belg., Mex. Norw., Port., Span. and U.S.**

### PULVIS ANTIMONIALIS. ANTIMONIAL POWDER.

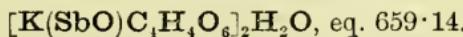
Antimonious Oxide, 1; Calcium Phosphate, 2.

**Dose.**—3 to 6 grains = 0·2 to 0·4 grammes.

**Official in Belg.,** Antimonious Oxide 334, Calcium Phosphate 666; **Mex.,** Antimonious Oxide 1, Calcium Phosphate 2; **Port.,** Antimonious Oxide 35, Calcium Phosphate 65; **U.S.,** Antimonious Oxide 33, Precipitated Calcium Phosphate 67.

**ANTIMONIUM TARTARATUM.**

TARTARATED ANTIMONY.

*B.P. Syn.*—POTASSIO-TARTRATE OF ANTIMONY; TARTAR EMETIC.*N.O. Syn.*—TARTARUS STIBIATUS.

Colourless, odourless, transparent rhombic crystals, or as a heavy white powder. Taste at first sweet, then nauseous and metallic.

**Solubility.**—1 in 17 of cold Water (slowly); 1 in 2 of boiling Water; sparingly soluble in Alcohol (60 p.c.); insoluble in Alcohol (90 p.c.).

**Medicinal Properties.**—Diaphoretic, expectorant, alterative, emetic, circulatory and nervous sedative and depressant, antispasmodic and antipyretic. Useful in the head symptoms of acute febrile diseases and in delirium tremens; contra-indicated in asthenic cases; alterative in chronic skin affections and in gout.

As a febrifuge and expectorant, it is given with great effect in the early stage of acute pneumonia, bronchitis and croup.

Externally, in the form of ointment, it acts as a powerful counter-irritant, producing a pustular eruption.

A review of postmortem examinations after death from the administration of tartar emetic.—*B.M.J.* '03, i. 873.

**Dose.**—As a diaphoretic,  $\frac{1}{24}$  to  $\frac{1}{8}$  grain = 0·003 to 0·008 grammes; as an emetic, 1 to 2 grains = 0·06 to 0·13 grammes.

*Ph. Ger.* maximum single dose, 0·2 gramme; maximum daily dose, 0·6 gramme.

**Prescribing Notes.**—*Best prescribed in aqueous solution or as the Vinum. In pill well triturated with Milk Sugar and Diluted Glucose q.s.*

**Incompatibles.**—Tannic Acid, the Alkalies and their Carbonates, and Lead salts, Astringent infusions, as Cinchona, Rhubarb, etc.

**Official Preparation.**—Vinum Antimoniale.

**Antidotes.**—Stomach-tube or emetics, Tannic Acid, Catechu, vegetable astringents, Tea or Coffe; stimulants if much collapse.

**Official** in all the Foreign Pharmacopœias.

**VINUM ANTIMONIALE. ANTIMONIAL WINE.**

Tartarated Antimony, 40 grains; boiling Distilled Water, 1 fl. oz.; Sherry, *q.s.* to yield 20 fl. oz.

Boiling Water is added to dissolve the Tartarated Antimony, as recommended in former editions of the *Companion*.

**Dose.**—10 to 30 minims = 0·6 to 1·8 c.c.; as an emetic, 2 to 4 fl. dram. = 7·1 to 14·2 c.c.

Contains 1 grain in 240 minims.

**Official in Dutch, Ger. and Jap.** (Vinum Stibiatum) 1 in 250; Mex. (Vino estibiado), 1 in 300; Spau. (Vino de Tartrato Antimónico Potasico), 1 in 230; Russ. (Vinum Stibio-Kalii Tartraici), 1 in 250; U.S. (Vinum Antimonii), 1 in 250; all with Sherry. Austr. (Vinum Stibii Kalio-Tartarici), 1 iu 250; Hung. (Vinum Stibiato-Tartaricum), 1 in 240; Belg. (Vinum Antimoniatum), 1 iu 200; Swiss (Vinum Stibiatum), 1 in 250; all with Malaga Wine. Port. (Vinho Antimonial), 1 iu 200 of Port Wine. All by weight, except U.S.

## ANTIPYRINE.

*See PHENAZONUM.*

**Not Official.**

## APIOL.

An oily liquid, with a peculiar odour and disagreeable taste, obtained from the Fruits of *Apium petroselinum* (Parsley).

**Medicinal Properties.**—It is useful in amenorrhœa and dysmenorrhœa.

**Dose.**—3 to 5 minims = 0·18 to 0·3 c.c.

**Prescribing Note.**—Usually given in capsules.

**Official in Belg., Mex. and Port., Apiol;** Dan. and Norw., Ætheroleum Petroselini; Dutch Supp., Oleum Petroselini. Swed. includes Fructus Petroselini, and an Aqua of it; Dutch Supp. includes an Aqua.

Apiol was described by Messrs. Joret and Homolle, who introduced the substance into medicine, as a yellow, oily, non-volatile liquid, but the Apiol obtained by us from the Homolle capsules, although yellow in colour, was volatile in the vapour of water to the extent of 95 p.c. Witney went into the subject in 1880, and describes Apiol as an impure Essential Oil of Parsley containing minute quantities of soft Resin, and the Apiol of Homolle as the Essential Oil of Parsley Seeds with small traces of a soft resin. The Essential Oil of Parsley is a yellow, oily liquid, and as such has been made Official in the Danish, Dutch Supp., and Norwegian Pharmacopœias. Belgiau gives Apiol as yellowish-brown in colour.

Arising out of a discussion as to what should be the colour of liquid Apiol, it was suggested in C.D. '94, ii. 17, that it was simply an alcoholic extract of Parsley Seeds; but this product is green, and contains but a small proportion (under 15 p.c.) of the Essential Oil of Parsley.

The stearoptene from the Oil is known as **Crystallised Apiol.**

Not Official.

### APOCYNUM.

*Syn.*—CANADIAN HEMP.

The Root of *Apocynum cannabinum* is Official in U.S.

**Medicinal Properties.**—It has been used in the United States as a Decoction, 1 Root in 60 of Water, boiled to 40 (dose  $\frac{1}{2}$  to 1 oz.), and given with good effect as a diuretic in dropsy.—*L.* '85, ii. 86; '86, i. 508; *B.M.J.* '87, i. 522; *T.G.* '98, 719, 730. Also as a fluid extract (dose 5 to 15 minimis = 0·3 to 0·88 c.c.) in pleurisy with effusion.—*T.G.* '87, 29.

It also possesses emetic and cathartic properties; but as it is a drastic purgative, it should be given with some caution.

The diuretic action of Canadian Hemp was favourably considered, although it was admitted that it might produce violent emesis and catharsis. These undesirable results were, however, attributed to the admixture of the bitter fibre of the wood with the bark of the root.—*B.M.J.* '97, ii. 1714.

**EXTRACTUM APOCYNI FLUIDUM (U.S.).**—1 fl. oz. equals 1 oz. of root.

**TINCTURA APOCYNI.**—Root, 1; Alcohol (60 p.c.), 10.

**Dose.**—5 to 10 minimis = 0·3 to 0·6 c.c., as a cardiac tonic, and diuretic in cardiac dropsy.—*T.G.* '89, 585; '95, 47; *L.* '94, i. 841; *B.M.J.E.* '94, i. 100; '94, ii. 47.

**APOCYNINE.**—An amorphous resinous substance, almost insoluble in Water, but soluble in Alcohol (90 p.c.) and in Ether.

### APOMORPHINÆ HYDROCHLORIDUM.

APOMORPHINE HYDROCHLORIDE.

HYDROCHLORATE OF APOMORPHINE, *B.P.* 1885.

$C_{17}H_{17}NO_2 \cdot HCl$ , eq. 301·36.

White or greyish-white, odourless, minute, shining, acicular crystals.

Should be preserved from the light in dark amber-coloured, thoroughly dry, bottles, and as far as possible protected from the air.

**Solubility.**—About 1 in 60 of Water; 1 in 50 of Alcohol (90 p.c.); nearly insoluble in Chloroform and in Ether; 1 in 100 of Glycerin.

The solubility in Water is given in *B.P.* as 1 in 50; minimum quantity of Water required for complete solution in 3 days at 60° F. is between 1 in 56 and 1 in 60, but if dissolved by the aid of a gentle heat it will remain in solution at 1 in 50. The aqueous solution, on being gently warmed, rapidly turns green.

The material used was re-crystallised, air-dried and powdered. It lost 3 p.c. of hygroscopic moisture on heating in a water-bath, which was exactly regained after 12 hours' exposure to air.

**Medicinal Properties.**—It is the most reliable emetic, and usually acts promptly (2 or 3 minutes) without the production of much preceding nausea or depression, or unpleasant after-effects. As a hypodermic injection in cases of poisoning, especially if unable to swallow.

Invaluable as an expectorant in acute and chronic bronchitis with viscid secretion, and in croup; in bronchial irritation due to inhalation of factory-dust, and in asthma.

As a hypnotic,  $\frac{3}{10}$ th grain hypodermically. As patients are susceptible to emetic action it is well to begin with  $\frac{1}{50}$ th grain.—*L.* '00, i. 1083.

Stated to be absolutely inert in Alcoholic poisoning.—*L.* '00, i. 1635.

**Dose.**— $\frac{1}{20}$  to  $\frac{1}{10}$  grain = 0.003 to 0.007 grainme, by hypodermic injection; by the mouth,  $\frac{1}{10}$  to  $\frac{1}{4}$  grain = 0.007 to 0.016 grammme.

*Ph. Ger.* maximum single dose, 0.02 grammme; maximum daily dose, 0.06 grammme.

**Prescribing Notes.**—*Its aqueous solution on keeping, or on being gently warmed, rapidly turns green. This green coloration is said to be due to the liberation of free Apomorphine by the alkalinity of the glass, and can be prevented by adding a few drops of dilute Hydrochloric Acid to the preparation. The Official injection keeps fairly well for a month or so. Some authorities are of opinion that the Ammonia in the air causes the alkalinity.*

**Official Preparation.**—*Injectio Apomorphinæ Hypodermica.*

**Not Official.**—Hypodermic Discs and Tabellæ, Haustus Apomorphinæ Compositus, Mistura Apomorphinæ et Terebeni, and Syrupus Apomorphinæ Hydrochloratis.

**Official in Austr., Dan., Dutch, Fr., Ger., Hung., Jap., Ital., Mex.; Norw., Russ., Swed., Swiss and U.S.**

### INJECTIO APOMORPHINÆ HYPODERMICA. HYPODERMIC INJECTION OF APOMORPHINE.

Apomorphine Hydrochloride, 1 grain; Diluted Hydrochloric Acid, 1 minim; Distilled Water (recently boiled), *q.s.* to make 110 minims.

**Dose.**—5 to 10 minims = 0.3 to 0.6 c.c.

**Not Official.**

**DISCS OF APOMORPHINE.**— $\frac{1}{15}$  to  $\frac{1}{10}$  grain dissolved in 6 to 10 minims of Distilled Water at the time of using.—*St. Bartholomew's.*

**TABELLÆ APOMORPHINÆ HYDROCHLORATIS.**— $2\frac{1}{2}$ -grain tablets containing  $\frac{1}{10}$  grain of the salt.—*Guy's.*

**HAUSTUS APOMORPHINÆ COMPOSITUS.**—Apomorphine Hydrochloride,  $\frac{1}{10}$  grain; Syrup of Squills, 60 minims; Oil of Turpentine, 10 minims; Mucilage of Gum Acacia, *q.s.*; Spirit of Ether, 10 minims; Distilled Water to 1 fl. oz.—*Middlesex.*

**MISTURA APOMORPHINÆ ET TEREBENI.**—Apomorphine Hydrochloride,  $\frac{1}{10}$  grain; Pure Terebene, 15 minims; Peru Balsam, 10 minims; Mucilage Mixture to 1 oz.—*Guy's.*

**SYRUPUS APOMORPHINÆ HYDROCHLORATIS (B.P.C.).**—Apomorphine Hydrochloride, 5 grains; Diluted Hydrochloric Acid, 15 minims; Alcohol (90 p.c.), 7 fl. drm.; Distilled Water, 7 fl. drm.; Syrup, to produce 20 fl. oz. Dissolve the salt in the Spirit and Water mixed, then add the Acid and the Syrup.

Dose.— $\frac{1}{2}$  to 1 fl. drm. = 1·8 to 3·6 c.c.

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### AQUÆ.

#### WATERS.

The Waters of the British Pharmacopœia are all distilled, except Aqua Camphoræ and Aqua Chloroformi.

In preparing distilled aqueous liquids only good natural potable Water must be employed, as directed for 'Distilled Water.'

In India and other tropical countries the Waters of Anethum, Anisum, Caruum, Cinnamomum, Fœniculum, Mentha Piperita, Mentha Viridis, and Pimenta, may be prepared from the oils without distillation, using 1 of Oil and 2 of Calcium Phosphate to 500 of Distilled Water.

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### AQUA DESTILLATA.

#### DISTILLED WATER.

A clear, colourless, odourless, tasteless, limpid, neutral liquid, obtained by distilling good natural Water of a potable quality.

Official in all the Foreign Pharmacopœias.

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### ARAROBA.

#### ARAROBA.

B.P. *Syn.*—GOA POWDER; CRUDE CHRYSAROBIN.

Fine powder, or in more or less agglomerated particles; yellow when first obtained, but rapidly becoming of a dull ochre or brown colour. Obtained from fissures in the trunk of *Andira Araroba*, and freed from woody fragments.

Official Preparation.—Used to prepare Chrysarobin

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**Not Official.****ARECA.**

The Seed of the *Areca Catechu*, the betel-nut tree. Imported from the East Indies.

**Medicinal Properties.**—Astringent, narcotic, anthelmintic. A remedy for tape-worm. 60 grains = 4 grammes, of powdered Areca Nut made into a ball with Honey, answers well as a vermifuge for a large dog. A paste is made of the powder for a dentifrice.

**Areca Nut Charcoal** used also as a dentifrice.

**Official** in Ger., Semen Arecae.

**ARECOLINÆ HYDROBROMIDUM.**—Fine white needles, readily soluble in Water and in Alcohol (90 p.c.), difficultly soluble in Ether and in Chloroform.

Sialagogue, diaphoretic and anthelmintic.  $\frac{1}{2}$  p.c. solution applied to the eye produces tingling followed by myosis. Maximum effect in from 10 to 15 minutes, lasts about 1 hour. Administered internally causes vomiting and diarrhoea.—*B.M.J.* '99, i. 82.

**Dose.**— $\frac{1}{20}$  to  $\frac{1}{4}$  grain = 0.0006 to 0.001 gramme, to be given with caution.

**Official** in Ger. and Swed.

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**ARGENTI NITRAS.**

SILVER NITRATE.

*B.P.Syn.*—LUNAR CAUSTIC.

$\text{AgNO}_3$ , eq. 168.69.

Colourless, transparent, tabular, rhombic crystals. It should be kept in dark amber-coloured vials protected from the light and dust.

**Solubility.**—100 grains in 50 minims of Water, measuring 80 minims; 1 in 18 of Alcohol (90 p.c.). Insoluble in strong Nitric Acid.

**Medicinal Properties.**—Astringent, sedative, anti-spasmodic, and tonic. It is useful in haematemesis, gastric ulcer, diarrhoea and cholera, as well as in chronic nervous irritability of and pain in the stomach; also in some nervous diseases, as epilepsy, chorea and locomotor ataxy. It is employed in chronic dysenteric ulcers as an enema, 60 grains dissolved in 60 oz. of Water, after clearing away the contents of lower bowel, and as a bougie in chronic gonorrhœa. A dark line on the edges of the gums, removable by a course of Acid Tartrate of Potassium, precedes the indelible discolouration of the skin and mucous membranes

(argyria), produced by the long-continued internal administration of this salt. Its administration should be interrupted for fourteen days at the end of two or three months, however small the dose. More than 100 grains per month should not be given.

Externally as a local stimulant to weak and callous ulcers, fistulæ, and aphthous affections of the mouth; as a caustic to poisoned wounds. As a local application to prevent pitting in smallpox, and to relieve the itching in pruritus; it is also applied, under Cocaine, to ulcers of the cornea. 1 to 3 grains to the oz. is employed for lotions and collyria, in all forms of conjunctivitis and both as a prophylactic and curative in ophthalmia neonatorum, and as an injection in urethritis, cystitis, and vaginitis. For eczema or pityriasis of the ear, a 1 in 20 solution in Sp. Ether Nit. answers well.

Chilblains are sometimes painted with a strong solution of Silver Nitrate.

A weak solution (1 in 500) for obstinate forms of eczema in children.—*L.M.R.* '88, 525.

In cholelithiasis.—*B.M.J.E.* '02, i. 99.

Powdered Silver Nitrate in antral empyema.—*B.M.J.E.* '99, i. 96.

A 2 p.c. solution of Silver Nitrate by far the best prophylactic in ophthalmia neonatorum—*B.M.J.* '03, ii. 135; *L.* '03, ii. 163.

Intravenous injection of a 2 or 5 p.c. solution in the treatment of septic conditions.—*B.M.J.E.* '02, i. 12.

Strong Solution of Potassium Iodide, or Potassium Cyanide, has been suggested for the removal of the black stains on the skin produced by Silver Nitrate.

Some new compounds of Silver have been introduced for the treatment of gonorrhœa. It is claimed that their solutions are not precipitated by Sodium Chloride or Albumens.

**Dose.**— $\frac{1}{4}$  to  $\frac{1}{2}$  grain = 0.016 to 0.032 gramme.

**Prescribing Notes.**—Prescribed in pills with Massa Kaolini. Solutions should be dispensed in stoppered bottles.

For application to the skin, a solution in Spirit of Nitrous Ether has been recommended. This solution throws down a light coloured precipitate, but does not itself become black like a simple spirituous solution. It, however, darkens the skin in a shorter time.

**Incompatibles.**—The Alkalies and their Carbonates and Alkaloids; all Bromides, Chlorides, Iodides and Phosphates; Solutions of Arsenic, and Tannin.

**Official Preparations.**—Argenti Nitratas Induratus, and Argenti Nitratas Mitigatus. Used in the preparation of Argenti Oxidum.

**Not Official.**—Mild Caustic Points, Argenti Iodidum Nascens

Argentum Foliatum, Actol, Albargin, Argentamin, Argentol, Argonin, Collargol, Ichthargan, Itrol, Largin, Protargol, and Tachiol.

**Antidotes.**—Aqueous solution of common Salt; Milk or some demulcent drink given freely; Emetic; White of Egg.

**Official in** Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Span., Swed., Swiss and U.S. Also fused Nitrate of Silver in all except Dan., Ger., Ital., Swed. and Swiss. Russ. now includes only a fused Nitrate.

**ARGENTI NITRAS INDURATUS.** TOUGHENED CAUSTIC.

Silver Nitrate, 19; Potassium Nitrate, 1. Mix by fusion.

**Official in** Ital., Jap., Mex. and Swiss.

**ARGENTI NITRAS MITIGATUS.** MITIGATED CAUSTIC.

Silver Nitrate, 1; Potassium Nitrate, 2. Mix by fusion.

**Official in** Austr., Dan., Fr., Ger. Jap., Norw., Russ., Swed., Swiss and U.S.

**Mild Caustic Points**, made by fusing Potassium Nitrate in various proportions with Silver Nitrate, are used by oculists and others.

**Not Official.**

**ARGENTUM FOLIATUM** (*Ger.*).—Thin leaves of pure Silver, which dissolve in Nitric Acid, yielding a clear colourless solution.

**ARGENTI IODIDUM NASCENS.**—Freshly precipitated Silver Iodide has been recommended in conjunctival catarrhs.

**Silver Iodide** is Official in U.S. It is a heavy, amorphous, yellowish powder, which should be kept in dark amber-coloured vials, protected from light.

**ACTOL** (Silver Lactate).—A white amorphous powder, or as colourless crystalline needles. Soluble 1 in 20 of Water. Introduced as an antiseptic. Useful as an injection ( $\frac{1}{4}$  to  $\frac{1}{2}$  grain per oz.) in gonorrhœa. The injection is attended with some pain.

Possesses no advantage for ophthalmic work over Silver Nitrate.—*B.M.J.* '01, ii. 1333.

**ALBARGIN** (Gelatose Silver; Silver Glutin).—Bright yellow powder, soluble in Water. Stated to be an active antiseptic.—*P.J.* '01, ii. 345.

**ARGENTAMIN.**—Silver Phosphate dissolved in Ethylenediamine solution. Antiseptic and astringent. A dilution of 1 to 4000 with Water has been recommended for urethral injection in gonorrhœa. As a 5 p.c. solution in ophthalmic work.—*B.M.J.E.* '95, ii. 20; '96, ii. 64; *L.* '95, ii. 47; *B.M.J.* '01, ii. 1333.

**ARGENTOL.**—A compound of Silver with Oxychinolin. A sparingly soluble yellowish powder, recommended as an antiseptic application to wounds and ulcers.—*P.J.* '97, i. 369; '98, ii. 342.

**ARGONIN.**—Is obtained by precipitating Silver Nitrate and Casein-soda with Alcohol. Contains about 4 p.c. of Silver. It is a fine white powder, soluble in Water. It is recommended as a disinfectant.—*P.J.* (3) xxv. 1193; *J.S.C.I.* '95, 1060; *L.* '95, ii. 47. A 2 p.c. aqueous solution gradually increased to 10 p.c., recommended in the treatment of gonorrhœa.—*B.M.J.E.* '96, ii. 64; *T.G.* '97, 740; *B.M.J.* '01, ii. 1333.

**ARGONIN L.**—Contains 10 p.c. Silver and is readily soluble. 1 p.c. solution used successfully in the treatment of anterior and posterior urethritis.—*B.M.J.E.* '99, i. 96.

**ARGYROL.**—Contains 30 p.c. of Silver combined with a protein extracted from wheat. 5 p.c. injections in acute gonorrhœa.—*L.* '03, ii. 1716. Instillations of 5 to 50 p.c. solutions are useful in ophthalmic work, and are painless.

**COLLARGOL** (Colloid Silver).—Black or greyish-black shining scales, with a metallic lustre. Soluble 1 in 2 of Water. Antiseptic and disinfectant. Employed in the form of a 15 p.c. ointment. Intravenously as an injection, 5 to 20 c.c. of a  $\frac{1}{2}$  to 1 p.c. solution. As a 1 to 5 solution in ophthalmic work.—*L.* '02, ii. 1800; *B.M.J.E.* '01, ii. 95; '02, ii. 16; *M.P.* '02, i. 85; *P.J.* '02, i. 115. Official in Dutch Supp.

**ICHTHARGAN** (Silver Thiohydrocarburo-sulphonate; Silver Ichthyolate).—A light brown, odourless, amorphous powder, containing 30 p.c. Silver. Soluble 1 in 6 of Water and in Glycerin. Insoluble in Alcohol (90 p.c.) and in Ether. Powerful antiseptic. Useful as an injection, 0·02 to 0·2 p.c., in gonorrhœa. 1 to 3 p.c. solution in affections of the posterior urethra.—*B.M.J.E.* '01, ii. 104; '02, ii. 16; '03, ii. 31; *P.J.* '01, ii. 299.

**ITROL** (Silver Citrate).—A white odourless powder, containing about 63 p.c. of Silver. Only slightly soluble in Water (1 in 4000). Antiseptic. Useful in gonorrhœa. As an injection (1 in 8000 to 1 in 4000 solution). As an insufflation. As a dusting powder for wounds. In the form of sticks for fistulæ, deep wounds and endometritis. Itrol, 2 to 5; White Wax, 1·0; Ol. Theobrom, 9; melt and divide into 30.—*P.J.* '96, i. 243; '97, ii. 254; *Pr.* lx. 292; *B.M.J.E.* '99, i. 99; *T.G.* '99, 631; *P.J.* '99, ii. 135; *B.M.J.* '01, ii. 1333. Official in Swed.

**LARGIN** (Silver Albuminate).—A light brown, amorphous, odourless powder. Soluble 1 in 8 of Water. Contains 11 p.c. Silver. Introduced as an antiseptic. Useful in gonorrhœa as an injection (1 in 4000). It is stated to have given very satisfactory results in superficial eye-diseases, such as acute infectious ophthalmia, in 3 to 10 p.c. solution. Inferior to the Nitrate or Protargol in gonorrhœal ophthalmia. Even saturated solution stated to cause no pain.—*B.M.J.* '00, i. 622; *B.M.J.E.* '00, i. 68; *P.J.* '00, i. 413.

**PROTARGOL** (Silver Protein).—A light brown or yellow, odourless powder, soluble 1 in 2 of Water. A powerful antiseptic and

germicide possessing deep penetrating powers, and stated not to precipitate albumen. Has been recommended in  $\frac{1}{4}$  to 2 p.c. solution as an unirritating injection in gonorrhœa.—*B.M.J.E.* '97, ii. 96; '98, i. 40; '98, ii. 2; *Pr. lx.* 292 and 311; *L.* '97, ii. 1628; '98, i. 872; *B.M.J.E.* '99, ii. 56, 58; *L.* '02, i. 1525; *B.M.J.E.* '99, i. 24; '01, ii. 103. In conjunctival affections in the form of a 5 to 10 p.c. solution.—*B.M.J.E.* '99, i. 8; *T.G.* '99, 318; *Pr. lxiv.* 476; *L.* '99, ii. 1046; '01, ii. 553. In gonorrhœal ophthalmia, 10, 20 and 30 p.c. solutions may be used.—*L.* '01, ii. 553; *B.M.J.* '01, ii. 1333. Zinc Sulphate stated to be incompatible with Protargol.—*P.J.* '02, ii. 293. In phthisis, injection of 40 c.c. of saline solution containing  $1\frac{1}{2}$  to  $2\frac{1}{2}$  grains Protargol, preceded and followed by an injection (through the same needle) of a few c.c. of pure saline solution.—*Proc. Brit. Cong. on Tuber.* iii. 444; *L.* '01, ii. 309.  $1\frac{1}{2}$  p.c. solution as an injection, and local application of a 10 to 20 p.c. solution to diseased area in urethral haemorrhage in gonorrhœa.—*L.* '02, i. 1526. Two cases of argyrosis following the use of Protargol in conjunctivitis.—*L.* '02, ii. 1199.

**Official in Dutch Supp.**

**Liquor Protargol.**—Protargol, 40, 80, 120 or 160 grains; Distilled Water to 1 fl. oz.—*London Ophthalmic.*

**TACHIOL** (Silver Fluoride).—Colourless, transparent crystals, changing rapidly on contact with air. Readily soluble in Water, and the solutions, if not too strong, are permanent. Introduced as a new antiseptic. It is stated to possess powerful bactericidal powers, superior to Carbolic Acid, and only slightly inferior to Corrosive Sublimate. Employed in from a 1 in 1000 to 1 in 5000 solution to disinfect cavities and suppurating sinuses, in tubercular lesions, and ulcerative processes. It is also stated to have met with some success in ophthalmic practice, its non-irritating character being an advantage. Its solution, however, blackens linen fabrics.—*L.* '02, i. 393; ii. 1707; *C.D.* '02, i. 309.

## ARGENTI OXIDUM.

SILVER OXIDE.

$\text{Ag}_2\text{O}$ , eq. 230·10.

A brownish-grey odourless powder when freshly prepared, but becoming of a blackish-brown colour on drying or on exposure to the air.

It should be preserved in dark amber-tinted dry bottles, and protected from dust and ammonia fumes.

**Medicinal Properties.**—It has the general therapeutic qualities of the Nitrate, without its escharotic effect. It is more slowly absorbed, and is said to be less liable to discolour the skin.

**Dose.**— $\frac{1}{2}$  to 2 grains = 0·032 to 0·13 grammes.

**Prescribing Notes.**—Usually given in a pill, made with *Massa Kaolini*.

If prescribed with Creosote or with the Chlorides in pills, the Oxide must be first diffused through some inert powder such as Kaolin, as the heat produced in rapidly reducing the Silver or by the Chlorine combining with it causes the mass to become red-hot, or to explode.

**Incompatibles.**—Bromides, Chlorides, and Iodides. Organic and readily oxidisable matter.

Official in Dutch Supp. and U.S.

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## ARMORACIÆ RADIX.

### HORSERADISH ROOT.

The fresh Root from cultivated plants of *Cochlearia Armoracia*.

Most active in the autumn and early spring before the leaves have appeared.

**Medicinal Properties.**—Sialagogue, stomachic, diuretic, slightly diaphoretic. Used in atonic dyspepsia and as a condiment; also as a sudorific in chronic rheumatism. Externally as a rubefacient. The infusion is used as a gargle for aphonia and sore throat.

**Official Preparation.**—Spiritus Armoraciæ Compositus.

**Not Official.**—Infusum Armoraciæ Compositum.

Official in Belg.; Fr., Raifort; Port., Rubao Rustico; Span. and Mex., Rabano Rusticano.

## SPIRITUS ARMORACIÆ COMPOSITUS. COMPOUND SPIRIT OF HORSERADISH.

Scraped Horseradish Root, 1 oz.; Dried Bitter Orange-Peel, 1 oz.; Nutmeg, 11 grains; Alcohol (90 p.c.), 5 fl. oz.; Distilled Water, 6 fl. oz. Mix and distil 8 fl. oz.

**Dose.**—1 to 2 fl. drm. = 3·6 to 7·1 c.c.

Belg., Dutch and Port. have a Spiritus; Belg., a compound Syrup; Port., compound Wine; Fr., Teinture de Raifort Comp.; Mex., Alcoholato de coclearia; Span., Alcohol de Cochlearia Comp. They all differ widely from the above.

### Not Official.

**INFUSUM ARMORACIÆ COMPOSITUM.**—Fresh Root, sliced, 1; Black Mustard Seed, 1; Compound Spirit of Horseradish, 1; boiling Distilled Water, 20. Macerate two hours; strain, and add the Spirit.

It is found in practice that a temperature of 150° to 180° F. makes the strongest infusion.

**Dose.**—1 to 2 fl. oz. = 28·4 to 56·8 c.c., as a warm stimulant.

**SIROP DE RAIFORT COMPOSE** (Autiscorbutic Syrup).—Cochlearia Leaves, 1000; Nasturtium Leaves, 1000; Horseradish Root, 1000; Dried Leaves of Menyanthes Trifoliata, 100; Bitter Orange Peel, 200; Ceylon Cinnamon, 50; White Wine, 4000; White Sugar, 5000; all by weight. Bruise the Nasturtium and Cochlearia Leaves, cut up the Horseradish Root, the Leaves of Menyanthes Trifoliata and the Bitter Orange Peel; break up the Cinnamon Bark. Macerate the whole in the White Wine for two days and distil on a Water bath. Collect 1000 of the aromatic liquor, and with it prepare a syrup in a closed vessel over the Water bath in the proportion of 180 grammes of Sugar for each 100 grammes of the liquor.

## ARNICÆ RHIZOMA.

ARNICA RHIZOME.

B.P. *Syn.*—ARNICÆ RADIX.

The dried Rhizome and Roots of *Arnica montana*.

Collected in the mountainous parts of Central and Southern Europe.

The dried flower-heads are Official in the *Ind.* and *Col. Add.*

**Medicinal Properties.**—Stimulant to the gastrointestinal and reflexly to the nervous and circulatory systems, irritant to the stomach and bowels in large doses. The tincture is used externally for bruises and wounds, diluted with Water, but eczema or erysipelatous inflammation may be set up; equally good results have been produced by the application of Spirit and Water.

**Official Preparation.**—Tinctura Arnicae.

**Not Official.**—Arnica Opodeldoc, Extractum Arnicæ Radicis Fluidum.

**Antidotes.**—Opium, Morphine.

Symptoms of poisoning by Arnica are violent vomiting, intense headache, diarrhoea, colic, feeble pulse.

**Official in Austr., Ital., Port. and U.S., root and flowers;** Fr., Hung., Mex. and Span., **root, leaves, and flowers;** Belg., Dan., Dutch, Ger., Jap., Norw., Russ., Swed. and Swiss, **flowers.**

**TINCTURA ARNICÆ. TINCTURE OF ARNICA.**

1 of Arnica Rhizome in No. 40 powder, percolated with Alcohol (70 p.c.) to yield 20. (1 in 20)

**Official in Belg., Fr., Spau. and U.S., 1 in 5; Dan., Dutch, Ger., Jap., Norw., Russ. and Swed. 1 and 10, Port. and Swiss 1 in 10, all from flowers;** Port. 1 in 5, U.S. 1 in 10, from the

**root;** Ital., **root 1,** Alcohol (60 p.c.) 10; all by weight except U.S.

A popular remedy used externally for bruises, mixed with hot water, and applied with lint. It has been suggested that the 'inflammation' which sometimes follows its use, has been due to the larvæ of *Atherix maculatus* when the Tincture has been made from the flowers (*L.M.R.* '80, 227); but it is probably due to idiosyncrasy.

**TINCTURA ARNICÆ FLORUM.**—Percolate 1 of Arnica flowers with Alcohol (45 p.c.) to make 10.

**Official** in the *Ind.* and *Col. Add.* for North American Colonies.

**Not Official.**

**ARNICA OPODELDOD.**—White Soap, 4; Alcohol (90 p.c.), 10; Tincture of Arnica, 5; Camphor, 1. Dissolve by heat, and strain.

**EXTRACTUM ARNICÆ RADICIS FLUIDUM (U.S.).**—1 in 1, made with a mixture of Alcohol 3, Water 1.

U.S. has also a **solid extract** made by percolation, with diluted Alcohol (48·6 p.c.) and Arnica Root.

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**Not Official.**

**ARSENII BROMIDI LIQUOR.**

**LIQUOR POTASSII ARSENIATIS ET BROMIDI (U.S.N.F.).**  
CLEMENS' SOLUTION.

Arsenious Anhydride, 73 grains; Potassium Bicarbonate, 73 grains; Bromine, 117 grains; Water, q.s. Boil the Arsenic and Potassium Bicarbonate in 2 oz. of Water till dissolved; when cold add 10 oz. of Water, then the Bromine, and make up with Water to 16 fl. oz. Stir occasionally during a few hours, then filter.

This Liquor was originally described by Dr. Clemens as 'a chemical union of Arsenic and Bromine,' but as the action of Bromine on Arsenious Acid results in the formation of Arsenic Acid and Hydrobromic Acid, the above formula has been adjusted to yield these products as Potassium salts.

The solution contains Arsenic equal to 1 p.c. of Arsenious Anhydride.

Recommended in the treatment of diabetes.—*L.M.R.* '83, 86.

**Dose.**—2 to 8 minims = 0·12 to 0·5 c.c.

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**ARSENII IODIDUM.**

**ARSENIOUS IODIDE.**

*Syn.*—**ARSENIC IODIDE.**

**AsI<sub>3</sub>**, eq. 452·20.

Orange or orange-red coloured crystals, having a faint

odour of Iodine, and which lose Iodine on exposure to air and light.

It should be preserved in dark amber-coloured well stoppered bottles in a cool place.

**Solubility.**—1 in 11 of Water; 1 in 42 of Alcohol (90 p.c.); 1 in 19 of Carbon Bisulphide.

It is gradually decomposed by boiling Water and by boiling Alcohol.

**Medicinal Properties.**—Has been used in obstinate cutaneous affections of syphilitic and tubercular origin.

**Dose.**— $\frac{1}{20}$  to  $\frac{1}{5}$  grain = 0.0034 to 0.013 grammes.

**Prescribing Notes.**—It is generally given as *Donovan's Solution*, or in a pill well triturated with Milk Sugar and massed with Glucose.

**Official Preparation.**—Liquor Arsenii et Hydrargyri Iodidi.

Official in Dutch Supp., Mex. (*Yoduro de Arsenico*) and U.S.

### LIQUOR ARSENII ET HYDRARGYRI IODIDI. SOLUTION OF ARSENIOUS AND MERCURIC IODIDES.

Arsenious Iodide, 87½ grains; Mercuric Iodide, 87½ grains; Distilled Water, q.s. to make 20 fl. oz. (1 in 100)

A yellowish, odourless liquid, with a disagreeable metallic taste, sp. gr. 1.015 to 1.018. It is also known as *Donovan's Solution*.

**Dose.**—5 to 20 minims = 0.3 to 1.2 c.c.

11 minims contain  $\frac{1}{10}$  grain of each salt.

**Incompatibles.**—Acids, the salts of Morphine, or other alkaloid, and Corrosive Sublimate.

Official in U.S., 1 in 100.

## ASAFETIDA.

### ASAFETIDA.

A gum resin, occurring in dull yellow or reddish-brown rounded or flattened tears, or in masses of agglutinated tears, having a persistent alliaceous odour and a bitter alliaceous acrid taste; obtained by incision from the Root of *Ferula fetida*, and probably other species. B.P. requires Asafetida to contain not less than 65 p.c. matter soluble in Alcohol (90 p.c.), but commercial samples vary considerably in this respect. Procured in Afghanistan and the neighbouring countries. Imported from Bombay.

**Medicinal Properties.**—Nervine stimulant, expectorant, and laxative. Useful in cases of flatulence, in hysterical

paroxysms; also in some forms of chronic bronchitis; very useful as an enema in the flatulent distension of typhoid or peritonitis, and in infantile convulsions.

As a successful preventive against abortion.—*M.A.* '93, 64; *B.M.J.E.* '95, i. 35.

**Dose.**—5 to 15 grains = 0·32 to 1 grammie.

**Prescribing Notes.**—In pill massed with a little dilute Alcohol. They are best varnished, as silver leaf is affected by this drug. The Tincture may be prescribed with Aromatic Spirit of Ammonia, or with the Tinctures of Valerian and *Hyoscyamus*. When diluted with Water to form a mixture, it requires the addition of Mucilage of Gum Acacia.

**Official Preparations.**—Tinctura Asafetidæ. Used in the preparation of Pilula Aloes et Asafetidæ, Pilula Galbani Composita, and Spiritus Ammoniæ Fetidus.

Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.

**PILULA ALOES ET ASAFTIDÆ, 1 in 4.** See ALOES.

**PILULA GALBANI COMPOSITA.** About 1 in 3½. See GALBANUM.

**SPIRITUS AMMONIÆ FETIDUS,** about 33 grains in 1 oz. See AMMONIA.

**TINCTURA ASAFTIDÆ. TINCTURE OF ASAFTIDA.**

1 of Asafetida, macerated with Alcohol (70 p.c.), to yield 5.  
(1 in 5)

**Dose.**—½ to 1 fl. dram. = 1·8 to 3·6 c.c.

Official in Belg., Dan., Dutch, Fr., Ital., Jap., Norw., Port., Span., Mex., Swed. and Swiss, 1 and 5; Swiss and U.S., 1 in 5; all by weight, except U.S. —

## ATROPINÆ.

ATROPINE.

$C_{17}H_{23}NO_3$ , eq. 287·05.

Colourless, odourless acicular crystals, or as a white more or less amorphous powder. Taste bitter and acrid. Obtained from the leaves and root of Belladonna. It gradually assumes a yellowish tint on exposure to air.

**Solubility.**—1 in 500 of Water; 1 in 3 of Alcohol (90 p.c.); 1 in 25 of Ether; 1 in 1 of Chloroform; 1 in 52 of Glycerin; 1 in 15 of Oleic Acid.

**Medicinal Properties.**—The Ointment is used for the

relief of pain arising from muscular spasm, and for neuralgia. See also Atropinæ Sulphas and Belladonna.

**Dose.**— $\frac{1}{200}$  to  $\frac{1}{100}$  grain = 0.0003 to 0.0006 grammes.

It is freely soluble in Oleic Acid, and is sometimes applied as a 1 or 2 p.c. solution.

**Official Preparation.**—Unguentum Atropinæ.

**Not Official.**—Unguentum Atropinæ, Unguentum Atropinæ cum Acido Borico, Unguentum Atropinæ cum Cocaina, and Atropinæ Oleas.

**Antidotes.**—In case of poisoning by Atropine, the antidotes are the same as for Belladonna.

**Official in Belg., Dutch, Fr., Mex., Port., Span. and U.S.**

### UNGUENTUM ATROPINÆ.—ATROPINE OINTMENT.

Atropine, 2; Oleic Acid (by weight), 8; Lard, 90. (1 in 50)

**Not Official.**

**UNGUENTUM ATROPINÆ.**—Atropine, 4 grains; Soft Paraffin, 1 oz.; heat till dissolved, and stir till cold.—*London Ophthalmic and Middlesex.*

**UNGUENTUM ATROPINÆ CUM ACIDO BORICO.**—Atropine, 4 grains; Powdered Boric Acid, 60 grains; Soft Paraffin 1 oz.—*London Ophthalmic.*

**UNGUENTUM ATROPINÆ CUM COCAINA.**—Atropine, 4 grains; Cocaine, 8 grains; Soft Paraffin, 1 oz.; heat till the alkaloids are dissolved.—*London Ophthalmic.*

**ATROPINÆ OLEAS.**—Atropine, 8 grains; Oleic Acid, 1 oz.

**HOMATROPINE.**—See p. 329.

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### ATROPINÆ SULPHAS.

ATROPINE SULPHATE.

(C<sub>17</sub>H<sub>23</sub>NO<sub>3</sub>)<sub>2</sub>H<sub>2</sub>SO<sub>4</sub>, eq. 671.44.

A white, or almost white, odourless, more or less crystalline powder, having a bitter, nauseous taste.

**Solubility.**—10 in 4 of Water; 1 in 4 of Alcohol (90 p.c.). Insoluble in Ether and Chloroform.

**Medicinal Properties.**—Mydriatic, anhidrotic, anti-galactagogue. Employed locally to dilate the pupil and paralyse the accommodation, in iritis, and before testing refraction or making ophthalmoscopic examination; used also to cause retraction of protruding iris; as it increases intra-ocular tension it does harm in glaucoma. It

is frequently combined with Morphine in hypodermic administration to prevent the undesirable effects of the latter. Injected as near the nerve as possible in sciatica, hypodermically also in ovarian and uterine pain. The hypodermic method is also the best to diminish the sweating of phthisis, for which purpose, in doses of not more than  $\frac{1}{200}$ th of a grain, Atropine is very useful; it at the same time relieves the cough. *See also Atropine and Belladonna.*

In the treatment of Morphinism.—*B.M.J.E.* '94, i. 20.

In the treatment of hernia, the hypodermic injection of  $\frac{1}{50}$  grain of Atropine was followed by immediate spontaneous reduction. In four subsequent cases  $\frac{1}{10}$  to  $\frac{1}{45}$  grain were used. In another case, a second injection necessary, and in a sixth case three injections.—*B.M.J.E.* '02, ii. 92; *P.J.* '03, i. 340.

In intestinal obstruction, three injections of  $\frac{1}{65}$  grain each.—*B.M.J.E.* '01, ii. 48; *M.A.* '02, 362.

In treatment of asthma,  $\frac{1}{2}$  milligramme internally, increasing dose every second or third day by  $\frac{1}{2}$  milligramme until patient is taking 4 milligrammes a day, gradually diminishing doses after a time. Duration of treatment, four to six weeks. Second and third course recommended at interval of six months.—*Pr. lxii. 698.*

In broncho-pneumonia in children.—*Pr. lxii. 698.*

Warning against the indiscriminate use of Atropine in eye diseases, particularly with patients over thirty years of age.—*B.M.J.* '02, i. 267.

**Dose.**— $\frac{1}{200}$  to  $\frac{1}{100}$  grain = 0.0003 to 0.0006 grammie.

Dan., Dutch, Ger., Ital., Norw., Russ. and Swiss give the maximum single dose as 0.001 milligramme; Ger., Ital. and Russ., maximum daily dose 0.003 grammie.

**Prescribing Notes.**—The Sulphate is best adapted for Aqueous Solutions, and the pure Alkaloid for Ointments. Can be given in pill well triturated with Milk Sugar and massed with 'Diluted Glucose.' Generally given in solution.

**Official Preparations.**—Lamellæ Atropinæ, and Liquor Atropinae Sulphatis.

**Not Official.**—Glycerinum Atropinæ, Guttæ Atropinæ Sulphatis, Guttæ Atropinæ cum Cocaina, Injectio Atropinæ Hypodermica, Pessus Atropinæ, Pilula Atropinæ, Atropinæ Methylbromidum, Atropinæ Salicylas, Atropinæ Valerianas, Eupthalminæ Hydrochloridum, Guttæ Eupthalminæ Hydrochloridi, Lamellæ Eupthalminea.

Atropine is used as an antidote in poisoning by Physostigmine, Morphine, Aconite, Gelsemine, Hydrocyanic Acid, Muscarine, Nitroglycerin, and Pilocarpine.

**Antidotes.**—In case of poisoning by Atropine, the antidotes are the same as for Belladonna, *q.v.*

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

**LAMELLÆ ATROPINÆ.** DISCS OF ATROPINE.

Discs of Gelatin, each weighing about  $\frac{1}{50}$  grain (1.3 milligrammes) and containing  $\frac{1}{5000}$  grain (0.013 milligramme) of Atropine Sulphate.

Gelatin Discs, each containing 0.001 gramme Atropine Sulphate, are Official in Swed. Ital. contains  $\frac{1}{10}$  milligramme.

**LIQUOR ATROPINÆ SULPHATIS.** SOLUTION OF ATROPINE SULPHATE.

Atropine Sulphate, 1; Salicylic Acid,  $\frac{1}{2}$ ; Distilled Water, 100. (1 in 100)

**Dose.**— $\frac{1}{2}$  to 1 minim =  $\frac{1}{220}$  to  $\frac{1}{110}$  grain of Atropine Sulphate.

Not Official.

**GLYCERINUM ATROPINÆ.**—Atropine Sulphate, 25½ grains, dissolved in water, 5 fl. oz.; add Compound Tincture of Lavender, 100 minims, and Glycerin, to 20 fl. oz. 100 c.c. contains 0.25 grammes Atropine.—*St. Thomas's.*

**GUTTÆ ATROPINÆ SULPHATIS.**—Atropine Sulphate, 1, 2 or 4 grains; Distilled Water, 1 oz.—*London Ophthalmic.*

**GUTTÆ ATROPINÆ CUM COCAINA.**—Atropine Sulphate 2 grains; Cocaine Hydrochloride, 10 grains; Distilled Water, 1 oz.—*London Ophthalmic.*

**INJECTIO ATROPINÆ HYPODERMICA.**—Atropine Sulphate, 2 grains; Water, 1 oz.

**Dose.**—2 to 4 minims =  $\frac{1}{120}$  to  $\frac{1}{60}$  grain of Atropine Sulphate.

**INJECTIO ATROPINÆ ET MORPHINÆ HYPODERMICA.**—See MORPHINÆ ACETAS.

**PESSUS ATROPINÆ.**—Atropine,  $\frac{1}{20}$  grain; Conine, 1 minim; Oil of Theobroma to 120 grains.—*Samaritan.*

**PILULA ATROPINÆ.**—Atropine Sulphate,  $\frac{1}{60}$ ,  $\frac{1}{30}$ ,  $\frac{1}{15}$ ,  $\frac{1}{12}$  grain; Liquorice Powder, 2 grains; Tragacanth Powder, 1 grain; Mucilage, q.s.—*Consumption.*

**ATROPINÆ METHYLBROMIDUM** (Mydriasis).—A white crystalline powder, readily soluble in Water, sparingly soluble in Alcohol (90 p.c.) and in Chloroform. Introduced as a new mydriatic employed in the form of a 1 to 2 p.c. solution, and also as a solution containing 1 p.c. of Cocaine. One drop of a 1 p.c. solution produces a maximum dilatation of the pupil in from 30 to 45 minutes. Cocaine intensifies the dilatation; Eserine quickly diminishes the pupillary dilatation produced by Methylbromide.—*B.M.J.E.* '03, ii. 52. Has been used in doses of  $\frac{1}{10}$  to  $\frac{1}{5}$  of a grain = 0.0065 to 0.013 grammes in pill form in the treatment of the night sweats of phthisis.

**ATROPINÆ SALICYLAS.**—A white, crystalline powder, only slightly soluble in Water. Introduced as a substitute for the Sulphate in ophthalmic practice, but its aqueous solution does

not keep so well as that of the latter. The author prepared 1 p.c. solutions of each salt, and the Salicylate developed a growth more quickly than the Sulphate. To make the solution keep well an excess of Salicylic Acid is required, and then it is irritating to the eye.

**Liquor Atropinæ Salicylatis.**—Atropine, 5 grains; Salicylic Acid,  $\frac{7}{2}$  grains; Water, 10 oz.—*Charing Cross.*

**ATROPINÆ VALERIANAS.**—Colourless, or white hygroscopic rhomboid crystals, having an odour of Valerianic Acid, and becoming coloured on exposure to light. Readily soluble in Water and in Alcohol (90 p.c.). Antispasmodic, antineuralgic. Recommended for internal administration.

**Dose.**— $\frac{1}{5}$  grain = 0·001 grammes. **Official in Fr. Codex.**

**EUPHTHALMINÆ HYDROCHLORIDUM** (*Phenylglycoyl-n-methyl-β-vinyl-diacetone-alkamine hydrochloride*).—White crystalline powder. Readily soluble in water. Mydriatic. Introduced as a substitute for Atropine and Homatropine, and used as a 2 to 5 p.c. solution. Stated to weaken the accommodation only to a very slight extent, but has no appreciable effect on the conjunctival vessels or on the corneal epithelium, and causes no hyperæmia, and effects soon pass off.—*B.M.J.* '99, ii. 775; *L.* '99, ii. 458. *Pr.* lxiv. 476. The free base **Euphtalmine** crystallises in six-sided prisms. A readily soluble **Euphtalmine Salicylate** has also been prepared.

**Guttæ Euphtalminæ Hydrochloridi.**—Euphtalmine Hydrochloride, 10 grains; Distilled Water, 1 oz.—*London Ophthalmic.*

**Lamellæ Euphtalminæ.**—Each disc contains  $\frac{1}{50}$  grain Euphtalmine.—*London Ophthalmic.*

## AURANTII CORTEX.

Both the fresh and the dried outer part of the Pericarp of *Citrus Aurantium, var. Bigaradia*, are Official.

In India and the Eastern Colonies, *Aurantii Cortex Indicum* (*Ind. and Col. Add.*) may be used. It is the corresponding portions of the varieties of *Citrus Aurantium* grown in India and Ceylon.

**Medicinal Properties.**—A mild tonic, aromatic and stomachic bitter. The Tincture and Syrup are largely used as flavouring agents.

**Prescribing Notes.**—*Preparations of Orange Peel should not be prescribed with Tincture of Perchloride of Iron, as the mixture would be blackened.*

**Official Preparations.**—Of the Fresh Peel, *Tinctura Aurantii* and *Vinum Aurantii*. Of the Tincture, *Syrupus Aurantii*, contained in *Tinctura Quininæ*, *Syrupus Aromaticus*

and Syrupus Cascaræ Aromaticus. Of the Dried Peel, Infusum Aurantii and Infusum Aurantii Compositum; used in the preparation of Infusum Gentianæ Compositum, Spiritus Armoraciæ Compositus, Tinctura Cinchonæ Composita, and Tinctura Gentianæ Composita.

**Not Official.**—Elixir Adjuvans, Vinum Aurantii Decannatum, Oleum Aurantii Corticis, Elixir Aurantii, Elixir Simplex, Spiritus Aurantii Compositus.

### AURANTII CORTEX RECENS. FRESH BITTER-ORANGE PEEL.

The Fresh outer part of the Pericarp of *Citrus Aurantium*, var. *Bigaradia*.

It is most plentiful in the market during February and March.

**Official in** Belg., Fr., Mex., Port. and Span.; U.S., *Citrus Aurantium*. The following use the unripe fruit: Dan., Ger., Norw., Russ. and Swed.

### SYRUPUS AROMATICUS. AROMATIC SYRUP.

Tincture of Orange, 1; Cinnamon Water, 1; Syrup, 2. The turbid fluid, formed by mixing the Tincture and Cinnamon Water, is cleared by filtration through Talc, before the Syrup is added.

**Dose.**— $\frac{1}{2}$  to 1 fl. dram.—1·8 to 3·6 c.c.

### SYRUPUS AURANTII. SYRUP OF ORANGE.

Tincture of Orange, 1; Syrup, 7. (1 in 8)

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

**Official in** all the Foreign Pharmacopoeias, but the formulas vary considerably.

### TINCTURA AURANTII. TINCTURE OF ORANGE.

Macerate 1 of Fresh Bitter-Orange Peel, cut small, with 4 of Alcohol (90 p.c.). (1 in 4)

Formerly called Tinctura Aurantii Recentis, and 6 of Fresh Peel made 20 of Tincture.

**Dose.**—30 to 60 minims = 1·8 to 3·6 c.c.

**Official in** Fr. (Alcoolature d'Orange), Fresh Peel 1, Alcohol 2; Ital., Peel 1, Alcohol 2; both by weight. U.S. (Tinctura Aurantii Dulcis), from Fresh Peel, 1 in 5.

### VINUM AURANTII. ORANGE WINE.

A sherry-coloured weak Alcoholic liquid, prepared by the fermentation of a saccharine solution containing Fresh Bitter-Orange Peel.

The Orange Wine of commerce.

## Not Official.

**ELIXIR ADJUVANS** (*U.S.N.F.*)—Sweet Orange Peel, Fresh 3 oz.; Wild Cherry bark, 1 oz.; Liquorice Root, decorticated and dried, 2 oz.; Coriander,  $\frac{1}{4}$  oz.; Caraway,  $\frac{1}{4}$  oz.; all troy weight; percolate with a mixture of Alcohol (94 p.c.) 1, and Water 2, to obtain 24 fl. oz., and add Syrup 16 fl. oz.

**VINUM AURANTII DETANNATUM** (*B.P.C.*).—Orange Wine, 1 gallon; Gelatin, cut small,  $\frac{1}{4}$  oz.; macerate for fourteen days, and decant.

**OLEUM AURANTII CORTICIS.**—A volatile Oil, extracted by mechanical means from Fresh Orange Peel; both varieties of Orange Peel are used; that from *Citrus vulgaris* is known as *Essence de Bigarade*, and that from *Citrus Aurantium* as *Essence de Portugal*; the former yields the finest Oil.

A pale yellowish liquid, with neutral reaction, having the odour of Orange Peel. At least 90 p.c. of the Oil consists of dextro-rotatory Limonene. Boiling point, 175° to 180° C. The Oil is strongly dextro-rotary (96° to 98° in 100 mm. tube at 20° C). Sp. gr. 0.840 to 0.860.

By keeping, the Oil becomes thicker and acquires a disagreeable terebinthinate taste, which may be prevented by mixing it while fresh with 10 p.c. of Absolute Alcohol. It should be kept in well stoppered bottles in a cool place.

**Solubility.**—Soluble 1 in 7 of Alcohol (90 p.c.), and in all proportions of Absolute Alcohol.

**Official in Austr., Belg., Dutch, Fr., Jap., Hung., Port., Mex. and U.S.**

**ELIXIR AURANTII** (formerly *U.S.*, now omitted).—Sprinkle or spray 1 fl. oz. of Oil of Orange over 2 oz. of Cotton Wool; pack it tightly in a percolator and pass through it a mixture (Alcohol 1, Water 3), sp. gr. 0.971, till 200 fl. oz. of a clear percolate are obtained, in which dissolve, without heat, Sugar 100 oz.; all by weight.

A better method of disseminating the Oil, is to sprinkle it upon blotting paper, pulp this with the diluted Alcohol, allow it to stand for 24 hours, and filter.

**ELIXIR SIMPLEX.**—Oil of Bitter-Orange, 30 minimis; Alcohol (90 p.c.), 6 fl. oz.; dissolve and add Distilled Cinnamon Water, 7 fl. oz.; Syrup, 7 fl. oz.; mix. Filter through paper moistened with Alcohol (45 p.c.) and well sprinkled with Kaolin, returning the first portions of filtrate until it passes through bright.

**Dose.**—20 to 60 minimis = 1.2 to 3.6 c.c.

**SPIRITUS AURANTII COMPOSITUS** (*U.S.*).—Oil of Orange, 10; Oil of Lemon, 2½; Oil of Coriander, 1; Oil of Anise,  $\frac{1}{2}$ ; Alcohol (sp. gr. 0.820) to make 50.

**AURANTII CORTEX SICCATUS.** DRIED BITTER-ORANGE PEEL.

The dried outer part of the Pericarp of *Citrus Aurantium*, var. *Bigaradia*.

**Official** in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital. (Arancio Amaro), Jap., Norw., Port. (Laranjeira Azeda), Russ., Span. (Naranjo Agrio), Swed. and Swiss; U.S., Aurantii Amari Cortex, also Aurantii Dulcis Cortex.

**INFUSUM AURANTII. INFUSION OF ORANGE PEEL.**

Dried Bitter-Orange Peel, 1; boiling Distilled Water, 20.  
Infuse for 15 minutes. (1 in 20)

**Dose.**— $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 c.c.

Fr. (Tisane d'Oranger), Leaves, 5; boiling Water, 1000.

**INFUSUM AURANTII COMPOSITUM. COMPOUND INFUSION OF ORANGE PEEL.**

Dried Bitter-Orange Peel,  $\frac{1}{2}$  oz.; Fresh Lemon Peel,  $\frac{1}{4}$  oz.; Bruised Cloves, 55 grains; boiling Distilled Water, 20 oz.  
Infuse for 15 minutes. (1 in 40)

**Dose.**— $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 c.c.

Official in Dutch Supp.

**TINCTURA AURANTII. See AURANTII CORTEX RECENS.**

Formerly two Tinctures were Official, one from Fresh Peel and the other from Dried Peel; the latter is now omitted.

The following are made with Dried Peel.—Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Norw., Russ., Span., Swed., Swiss and U.S., 1 in 5; all by weight, except U.S.

**AURANTII FLORIS AQUA.**

ORANGE-FLOWER WATER.

N.O. *Syn.*—AQUA NAPHAE.

Commercial Orange-flower Water prepared by a process of distillation from the Flowers of the Bitter-Orange tree, *Citrus Aurantium*, var. *Bigaradia*, diluted with twice its volume of Distilled Water. It keeps best in the undiluted state, and should therefore be diluted only as required.

U.S. directs the Triple Extract to be diluted with an equal volume of Distilled Water. Swiss use the undiluted Water.

**Medicinal Properties.**—Both the Water and the Syrup are used as flavouring agents; about 1 of the Concentrated Water to 8 of Distilled Water; it is also used in eye lotions.

**Official Preparation.**—Syrupus Aurantii Floris. Contained in Mistura Olei Ricini, and Syrupus Calcii Lactophosphatis.

**Not Official.**—Oleum Aurantii Florum (Oleum Neroli).

**Official in Austr., Belg., Dan., Dutch, Fr. (Eau Distillée de Fleur d'Oranger), Hung., Ital. (Acqua Distillata di Arancio), Jap., Mex. (Agua destilada de corteza de naranja amarga), Port. (Agua de Flores de Laranjeira), Russ., Span. (Agua de Azahar), Swed., Swiss and U.S.**

**SYRUPUS AURANTII FLORIS. SYRUP OF ORANGE FLOWER.**

Dissolve 6 of Refined Sugar in 2 of boiling Distilled Water; add 1 of undiluted Orange-flower Water of commerce, and make up the total weight to 9 with recently boiled Distilled Water.

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

**Official in** Belg., O.F.W. 345, Sugar 655; Dutch Supp., O.F.W. 59, Tincture of Saffron 1, Sugar 240, Water 100; Fr., Jap., Mex. and Span., O.F.W. 10, Sugar 18; Port., O.F.W. 7, Sugar 13; Swiss, O.F.W. 36, Sugar 64; all by weight. U.S., Sugar 85, O.F.W. to measure 100.

**Not Official.**

**OLEUM AURANTII FLORUM. Syn. OLEUM NEROLI.**—A volatile Oil, obtained by distilling fresh Orange-flowers with Water. The watery distillate constitutes the Aqua Floris Aurantii Conc. of commerce. The finest Oil is obtained from the Bitter-Orange; that from the Portugal or Sweet-Orange is not so good. From the leaves, twigs and immature fruits of both varieties is obtained the commercial Oil of Petit Grain.

A yellowish or brownish limpid liquid, with neutral reaction, having a powerful odour of Orange-flowers. Sp. gr. 0·870 to 0·890.

**Solubility.**—Soluble in all proportions of Alcohol (90 p.c.) or in Absolute Alcohol.

**Official in** Austr., Belg., Fr., Ital., Jap., Mex., Port., Span., Swiss and U.S.

**Not Official.**

**AURI BROMIDUM.**

**AuBr<sub>3</sub>**, eq. 433·75.

In dark brown masses, soluble in Water. It has been used on the Continent for the relief of hysteria and epilepsy.

The Tribromide obtained from Merck was soluble about 1 in 75 of Water. It appears to be about ten times more active than the more commonly used Bromides, and has been given in  $\frac{1}{4}$  (increased to  $\frac{1}{2}$ ) grain doses in severe cases of hysteria and epilepsy.—*L.* '90, i. 869.

**Dose.**— $\frac{1}{16}$  to  $\frac{1}{4}$  grain = 0·0067 to 0·016 grammes.

**Prescribing Notes.**—*Dispensed in pills with Massa Kaolini or in compressed Tablets.*

**AURI ET POTASSII BROMIDUM.**—Brownish-black needle-shaped crystals. Readily soluble in Water. Introduced as a substitute for the Tribromide.

**Dose.**— $\frac{1}{8}$  grain. = 0.021 grammes.

**LIQUOR AURI ET ARSENII BROMIDI (U.S.N.F.).**—Arsenious Acid 0.25 gramme; Gold Tribromide, 0.325 gramme; Bromine Water and Distilled Water, of each a sufficient quantity to make 100 c.c. Solutions somewhat resembling this are known under the names of 'Bromaurum' and Liquor Auri Bromidi Arsenatis.

This liquor has been found useful in rheumatism.—*L.* '95, ii. 921; *L.* '00, i. 72.

The above liquor is also combined with Mercury Oxybromide in syphilitic affections.

#### Not Official.

### AURI CHLORIDUM.

Under this heading are arranged the following varieties:—

1. **Pure Chloride of Gold**,  $\text{AuCl}_3$ , containing about 65 p.c. of metallic Gold. **Official in Fr.** (*Chlorure d'Or*), **Port.** (*Chloreto de Ouro*), and **Span.** (*Cloruro Aurico*).
2. **Chloride of Gold and Sodium** (**Commercial 'Chloride of Gold'**), the crystallised double salt  $\text{AuCl}_3 \cdot \text{NaCl} \cdot 2\text{H}_2\text{O}$ , containing 50 p.c. of metallic Gold. **Official in Belg.** (*Chloruretum Auri et Sodii*), **Fr.** (*Chlorure d'Or et Sodium*), **Ital.** (*Cloruro di Oro e di Sodio*) and **Port.** (*Chloreto de Ouro e de Sodio*).
3. **Commercial Chloride of Gold and Sodium.** Commercial Chloride of Gold and Sodium is the above crystallised salt mixed with an equal weight of Chloride of Sodium, and contains 25 p.c. of metallic Gold.
4. **Auri et Sodii Chloridum, U.S.** A mixture composed of equal parts of dry Chloride of Gold and Chloride of Sodium, and which contains about 32 p.c. of pure Gold. **Official in Dutch** (*Chloretum Aurico-Natricum*), **Russ.** and **Swiss** (*Auro-natrium Chloratum*).

Some foreign samples of commercial Chloride of Gold are the double Chloride of Gold and Potassium  $\text{AuCl}_3 \cdot \text{KCl} \cdot 2\frac{1}{2}\text{H}_2\text{O}$ , corresponding to about 47 p.c. of metal.—*P.J.* (3) xxii. 902.

**Medicinal Properties.**—It has been given on the Continent for amenorrhœa and secondary syphilis. Chloride of Gold and Sodium has been used successfully in tertiary syphilis, spinal sclerosis, hystero-epilepsy, asthma, chorea, and in uterine affections.

**Dose.**— $\frac{1}{16}$  to  $\frac{1}{4}$  grain = 0.004 to 0.016 grammes.

**Prescribing Notes.**—It may be given in the form of pills made with Massa Kaolini; or in aqueous solution. Its solutions should be protected from white light.

It is also used in photography.

Not Official.

### AZADIRACHTA INDICA.

INDIAN AZADIRACH.

Syns.—NEEM BARK, MARGOSA BARK.

The dried Bark of the stem of *Melia Azadirachta*; Infusum *Azadirachtæ Indicæ* (1 in about 109), dose  $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 c.c.; and Tinctura *Azadirachtæ* (1 in 10), dose 30 to 60 minims = 1·8 to 3·6 c.c.; are Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

### BALSAMUM CANADENSE.

See TEREBINTHINA CANADENSIS.

Not Official.

### BALSAMUM DIPTEROCARPI.

GURJUN BALSAM, OR WOOD OIL.

A balsamic exudation, obtained from the Trunk of *Dipterocarpus laevis* and other species by incision and the application of heat. Imported from the East Indies. It is an oleo-resin, constituting a transparent liquid of the consistence of Olive Oil, lighter than Water, and of a dark brown sherry colour, slightly fluorescent.

**Medicinal Properties.**—Similar to those of Copaiba. Useful for leprosy. Mr. J. D. Hillis, of the Leper Asylum in British Guiana, is greatly in favour of it.—*L.* '80, i. 659; *M.P.* '89, i. 664; see also *L.* '90, i. 136. Von Reisnen gives Wood Oil internally, commencing with daily doses of 5 drops, increasing gradually to 70 or more, suspending the treatment when intolerance is shown. Externally the leprous parts are treated with an ointment of Gurjun Balsam, 3 parts; Lanolin, 1 part.—*P.J.* '95, ii. 27.

It is used in India as a substitute for Balsam of Copaiba in gonorrhœa; also as a natural varnish.

**Prescribing Notes.**—Best prescribed in capsules for internal administration. As a local application in the form of an emulsion made with Lime Water, or as an ointment made with a Lanolin basis.

**BALSAMUM PERUVIANUM.****BALSAM OF PERU.**

A dark brownish viscid liquid, obtained (by special treatment) from the Trunk of *Myroxylon Pereiræ*, growing in San Salvador, Central America. Sp. gr. 1·135 to 1·150.

**Solubility.**—1 in 1 of Alcohol (90 p.c.) ; when more than 3 of Alcohol are added to 1 cf. Balsam it becomes turbid ; in all proportions of Chloroform ; insoluble in Olive Oil.

**Medicinal Properties.**—Stimulant and disinfectant expectorant. Useful in chronic catarrh, asthma, and other chronic pulmonary complaints, contra-indicated in acute catarrh because of its stimulant action ; also to restrain excessive discharges, as gleet, etc.

Externally as an ointment for chronic indolent ulcers and for sore nipples ; for scabies and pediculi and parasitic skin diseases, to relieve itching in urticaria, and prevent or heal bedsores.

Balsam of Peru contains the Esters of Cinnamic and Benzoic Acids, both of which possess antiseptic properties.

The Balsam contains an Essential Oil, the vapour of which is extremely toxic to the acarus of itch. The patient is rubbed in the evening for fifteen or twenty minutes with the Balsam ; it is not necessary to rub hard, as the vapour is sufficient to kill the parasite.—*L.* '96, i. 1101.

**Dose.**—5 to 15 minims = 0·3 to 0·9 c.c.

**Prescribing Notes.**—Given as an emulsion with Mucilage of Gum Acacia, or Sugar and yolk of Egg with Water.

**Not Official.**—Unguentum Peruvianum, and Unguentum Peruvianum Resinosum.

**Official** in all the Foreign Pharmacopœias.

**Not Official.**

**UNGUENTUM PERUVIANUM.**—Balsam, 1; Lard, 7.

**UNGUENTUM PERUVIANUM RESINOSUM.**—Balsam, 1; Resin Ointment, 1.

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**BALSAMUM TOLUTANUM.****BALSAM OF TOLU.**

A yellowish-brown soft tenacious mass, which exudes from the Trunk of *Myroxylon Toluifera* on incision. It hardens on keeping. Imported from the northern ports of Colombia, South America.

**Solubility.**—1 in 1 of Alcohol (90 p.c.) ; 1 in 3 of Benzol ;

2 in 1 of Chloroform; 1 in 1 of Glacial Acetic Acid; insoluble in Petroleum Spirit; nearly insoluble in Carbon Bisulphide.

**Medicinal Properties.**—Similar to those of the Balsam of Peru, but not used externally.

**Dose.**—5 to 15 grains = 0·32 to 1 gramm.

**Prescribing Notes.**—Usually given as the Syrup, which is useful as a flavouring agent, and as a remedy in cough mixtures. The Tincture when mixed with Water requires the use of Mucilage of Gum Acacia.

**Official Preparations.**—Of the Balsam, Syrupus Tolutanus and Tinctura Tolutana; used in the preparation of Tinctura Benzoini Composita. The Syrup is contained in Mistura Ammoniaci. The Tincture is used in the preparation of Tolu Basis which is contained in Trochiscus Acidi Carbolicci, Trochiscus Morphinæ, and Trochiscus Morphinæ et Ipecacuanhæ.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Ital., Jap. Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

### SYRUPUS TOLUTANUS. SYRUP OF BALSAM OF TOLU.

Balsam of Tolu, 1½, is boiled with 20 of Distilled Water to produce 16 of liquid, in which (after filtration) are dissolved 32 of sugar. When finished it should weigh 48.

A better flavoured Syrup may be made as follows: Balsam of Tolu, 1½; Sugar, 8. Powder the Tolu with the Sugar, macerate in Water 16, for 24 hours, with frequent agitation; filter bright, and dissolve in it (cold) Sugar 24.

**Dose.**—½ to 1 fl. drm. = 1·8 to 3·6 c.c.

**Official in Belg., Dutch Supp., Fr., Ital., Jap., Norw., Port., Russ., Span., Swiss and U.S.; Dan. and Mex. made with Tincture.**

### TINCTURA TOLUTANA. TINCTURE OF BALSAM OF TOLU.

1 of Balsam of Tolu, macerated with Alcohol (90 p.c.) q.s. to yield 10. (1 in 10)

**Dose.**—½ to 1 fl. drm. = 1·8 to 3·6 c.c.

**Official in Dan., Fr., Mex., Span. and Swed., 1 in 5; Port., 3 in 20; U.S., 1 in 10. All by weight, except U.S.**

### Not Official.

### BAPTISIN.

A powdered extract obtained from *Baptisia tinctoria*. In small doses, laxative; in large doses, purgative and emetic.

**Dose.**—1 to 5 grains = 0·06 to 0·32 gramm. Usually given in pill.

Not Official.

### BARII SULPHIDUM.

It is somewhat difficult to obtain in a pure condition, and commercial samples as a rule do not contain more than 50 p.c. BaS.

**Medicinal Properties.**—The chief use for this is as a **depilatory**, for which purpose it is unequalled, removing hair with less injury to the skin than any other application.

**DEPILATORY.**—Barium Sulphide (containing 70 p.c. BaS, or an equivalent quantity of any other strength) in fine powder, 2; Starch, 5; Orris Root in powder, 1. Mix.

For use make it into a thin paste with Water, apply to the part from which the hair is to be removed; after 5 minutes scrape off with a blunt knife.

Not Official.

### BARII CHLORIDUM.

Colourless crystalline plates.

**Solubility.**—1 in  $2\frac{1}{2}$  of Water.

**Medicinal Properties.**—Occasionally given in syphilis, scrofula and cardiac disease, but requires care on account of its toxic properties.

**Dose.**— $\frac{1}{4}$  to 2 grains = 0.016 to 0.13 grammes.

Toxic effects occur only with large doses.—*L.* '03, i. 1134.

Official in Ger.

Not Official.

### BEBEERINÆ SULPHAS.

Dark-brown thin translucent scales, yellow when in powder, with a strong bitter taste. A preparation made from *Nectandra* or *Bebeelu* Bark (*Nectandra Rodiae*), containing about 60 p.c. of alkaloids, one half being Bebeerine (Beberine),  $C_{19}H_{21}NO_3$ . It was Official from 1864 till 1898.

**Solubility.**—Sparingly in Alcohol (90 p.c.); dissolves about 1 in 1 of Water, and the solution can be diluted up to 1 and 8 of Water, but on further dilution it precipitates until about 80 or 100 parts of Water have been added, but samples vary in this respect; readily soluble in Water containing a mineral Acid.

**Medicinal Properties.**—Aromatic bitter, stomachic tonic, an imperfect substitute for Quinine.

**Dose.**—1 to 5 grains = 0.06 to 0.32 grammes.

**Prescribing Notes.**—*Given in solution, or in pills made with 'Dispensing Syrup.'*

Official in Dutch Supp.

The following pure products are commercial : Bebeerine pure, slightly soluble in Water, readily in Alcohol, Chloroform and Ether ; Bebeerine Hydrochloride and Bebeerine Sulphate, are both readily soluble in Water and Alcohol. Dose of the two latter 1 to 2 grains = 0·06 to 0·13 grammes.

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### Not Official.

#### BELÆ FRUCTUS.

Bael Fruit is obtained from *Ægle Marmelos*.

The dried half-ripe Fruit was formerly Official, but is now omitted.

The fresh half-ripe Fruit is now Official in the *Ind. and Col. Add.* for use in India and the Eastern Colonies, as is also the Liquid Extract.

**Medicinal Properties.**—The Fresh Fruit has been much extolled in India for diarrhoea and dysentery, and the Confection prepared in Britain appears to have similar properties. The Dried Fruit is not considered a trustworthy remedy.

**CONFECTIO BELÆ RECENTIS (Squire).**—Prepared from Fresh Fruits imported from India in the spring months. It retains the odour and flavour of the Fresh Fruit.

**Dose.**—A teaspoonful.

**EXTRACTUM BELÆ LIQUIDUM (Ind. and Col. Add.).**—Made by macerating 4 of bruised Bael Fruit in Water by successive treatments, evaporating the mixed fluids to 3, and when cold adding Alcohol (90 p.c.), q.s. to make 4.

**Dose.**—1 to 2 fl. drm. = 3·6 to 7·2 c.c.

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#### BELLADONNA.

##### BELLADONNA.

The fresh Leaves and Branches of *Atropa Belladonna*, as well as the dried Root, are Official.

**Medicinal Properties.**—Anodyne, antispasmodic, mydriatic, antigalactagogue, anhydrotic, and diuretic. There is no drug which can compare with it in checking the secretions of milk, sweat, and saliva. It is given for the relief of some nervous and spasmotic disorders, as epilepsy and whooping-cough ; in renal colic, dysmenorrhœa and typhlitis ; in full and frequent doses for asthma, both as a prophylactic and curative. It relieves cardiae pain, palpitation and aortic regurgitation, and is of service in adynamic fevers. Useful in typhoid with contracted pupil, and in acute bronchitis it stops profuse secretion. In large or con-

tinued doses it causes dilatation of the pupil and dryness of the mouth and throat. For habitual constipation  $\frac{1}{6}$  to  $\frac{1}{2}$  grain of Extract on rising in the morning. For nocturnal incontinence of urine, dose 5 to 10 minims of the Tincture, with the same dose of Tinct. of Perchloride of Iron three times a day. Ringer recommends larger doses of Belladonna for this troublesome complaint in children, 10 to 30 minims of the Tincture three times a day; small doses often fail when large doses at once succeed. Useful in loss of tone and irritable state of the generative organs which gives rise to nocturnal emissions, although it has slightly aphrodisiacal properties.

**Prescribing Notes.**—*The Extract in pills, also the Tincture and Succus are for internal use. The Suppository is used in prostatitis, cystitis and chordee. Externally the Liniment and Compound Liniment sprinkled on piline are very useful in pleurodynia, lumbago and muscular rheumatism, as is also the Chloroform preparation alone or mixed with Oil. The Glycerinum as a paint, and the Emplastrum, are used for sprains, acute synovitis, and to check mammary secretion and prevent inflammation of the breast; the plaster is also an excellent remedy in cardiac pain and palpitation. Extract of Belladonna is a component of many Hospital formulas for pills, and is prescribed with Aloes, Camphor, Quinine, Rhubarb, Valerian and Zinc Oride, in doses of  $\frac{1}{8}$  to  $\frac{1}{4}$  grain in each pill.*

**Dose.**—Will be found under the respective Preparations.

**Incompatibles.**—Caustic Alkalies, Opium, Strychnine.

**Official Preparations.**—Extractum Belladonnæ Viride, and Succus Belladonnæ, from the fresh leaves and branches. Extractum Belladonnæ Liquidum, from the dried root. Emplastrum Belladonnæ, Extractum Belladonnæ Alcoholicum, Linimentum Belladonnæ, Tinctura Belladonnæ, and Unguentum Belladonnæ, from the Liquid Extract. Suppositoria Belladonnæ, from the Alcoholic Extract. Atropine, from leaves or root.

**Not Official.**—Chloroformum Belladonnæ, Collodium Belladonnæ, Emplastrum Belladonnæ Viride, Extractum Belladonnæ Folii Alcoholicum, Glycerinum Belladonnæ, Linimentum Belladonnæ Compositum, and Ethereal Tincture of Belladonna.

**Antidotes.**—In cases of poisoning by Belladonna, use stomach-tube or give one of the following emetics: 10 grains of Copper Sulphate, 20 grains of Zinc Sulphate, 1 oz. of Ipecacuanha Wine, or hypodermic injection of  $\frac{1}{10}$  grain Apomorphine. Give stimulants; inject Pilocarpine; an enema of coffee. If necessary apply artificial respiration.

### BELLADONNÆ FOLIA. BELLADONNA LEAVES.

The fresh Leaves and Branches of *Atropa Belladonna*, collected when the plant is in flower.

The percentage of Alkaloid varies considerably; a good well-dried sample should contain about 0·5 p.c.

*Ph. Ger.* maximum single dose, 0·2 grammes; maximum daily dose, 0·6 grammes.

**Official** in Austr., Belg., Dan., Ital., Mex., Norw., Russ., Span., Swed., Swiss and U.S., Leaves; Dutch, Leaves and Fresh Herb; Fr., Leaves and Fruit; Ger., Leaves and Branches; Port., Herb.

### **EXTRACTUM BELLADONNÆ VIRIDE. GREEN EXTRACT BELLADONNA.**

Heat the expressed Juice of the Fresh Leaves and Young Branches to 130° F. (54·4° C.), and collect on a filter the green colouring matter which separates; heat the filtrate to 200° F. (93·3° C.) and filter. Evaporate the clear liquid to an Extract, returning the green colouring matter towards the end of the process and completing the operation at 140° F. (60° C.).

An average sample of Extract contains rather over 1 p.c. of Alkaloids.

**Dose.**— $\frac{1}{4}$  to 1 grain = 0·016 to 0·06 grammes.

*Ph. Ger.* maximum single dose, 0·05 grammes; maximum daily dose, 0·15 grammes.

**Official** in Austr. and Mex., alcoholic from the leaves; Belg., clarified juice from leaves evaporated; Dan., made from leaves with weak spirit; Dutch, alcoholic from fresh herb; Dutch Supp., aqueous from fresh herb; Fr., clarified juice from leaves evaporated, also alcoholic from the seeds; Ger., made with water and spirit from leaves and flowering branches; Hung. and Ital., alcoholic from root; Norw. and Swed., alcoholic from leaves; Port., aqueous from dried leaves, alcoholic from fresh herb and alcoholic extract purified by alcohol; Russ., made from leaves with water and spirit; Span., clarified juice from leaves evaporated, and aqueous from dried leaves; also alcoholic from dried leaves; Swiss, alcoholic, 1 = 2 of root, also **Fluid Extract** 1 in 1; U.S., an alcoholic extract from the powder of the leaf, also **Fluid Extract** of the root.

### **SUCCUS BELLADONNÆ. JUICE OF BELLADONNA.**

Add 1 of Alcohol (90 p.c.) to 3 of the expressed Juice from the Fresh Leaves and Young Branches.

**Dose.**—5 to 15 minimis = 0·3 to 0·9 c.c.

Belladonna Juice, which would yield an Extract containing 1 p.c. of alkaloid, would form a Succus of about 0·05 p.c., which is also the strength of the Tincture.

### **BELLADONNÆ RADIX. BELLADONNA Root.**

The Root of *Atropa Belladonna*, collected in the autumn and dried.

A good parcel of Roots should average 0·5 p.c. of alkaloid, but occasional bales are found averaging 0·7 to 0·8 p.c.

**Official in Austr., Belg., Dan., Fr., Hung., Ital., Mex., Port., Span., Swiss and U.S.**

**EMPLASTRUM BELLADONNÆ. BELLADONNA PLASTER.**

4 of Liquid Extract of Belladonna evaporated to 1, and mixed with 5 of Resin Plaster.

Contains 0·5 p.c. of alkaloid.

This Plaster can be obtained spread on calico, linen, or leather; it is also supplied in rubber combination, spread on felt or kid, plain or porous.

**Official in Belg., Extract 1 in 8; Fr., Alcoholic Extract 3 in 4; Port., Alcoholic Extract 1, Lead Plaster 9; Span., Extract about 1 in 5; Swiss, Fluid Extract 3 in 10; U.S., Alcoholic Extract of Leaves 1, Resin Plaster 2, Soap Plaster 2.**

**EXTRACTUM BELLADONNÆ ALCOHOLICUM. ALCOHOLIC EXTRACT OF BELLADONNA.**

Prepared from the Liquid Extract of Belladonna, and readjusted by means of Milk Sugar, so as to contain 1 p.c. of alkaloid.

**Dose.**— $\frac{1}{4}$  to 1 grain = 0·016 to 0·06 grammes.

Foreign Pharmacopeias compared under Extractum Viride.

**EXTRACTUM BELLADONNÆ LIQUIDUM. LIQUID EXTRACT OF BELLADONNA.**

A fluid prepared with a mixture of 7 volumes of Alcohol (90 p.c.) and 1 volume of Distilled Water, by re-percolation, and standardised to contain 0·75 p.c. of alkaloid =  $\frac{3}{4}$  grain in 110 minims.

Commercial samples of this liquid extract vary enormously in colour and consistence, consequently all preparations made from the liquid extract will also have a tendency to vary in colour, and may necessitate explanations to physicians and patients.

**LINIMENTUM BELLADONNÆ. LINIMENT OF BELLADONNA.**

Liquid Extract of Belladonna, 10; Camphor, 1; Distilled Water, 2; Alcohol (90 p.c.), q.s. to yield 20.

**Prescribing Notes.**—*Prescribed with equal parts of Soap Liniment or Compound Camphor Liniment. Does not mix readily with fixed Oils. When an oily liniment is required it is better to order the Chloroform of Belladonna mixed with Olive or Almond Oil.*

**Official in U.S., about 1 in 1.**

**SUPPOSITORIA BELLADONNÆ. BELLADONNA SUPPOSITORIES.**

Made with Alcoholic Extract of Belladonna and Oil of Theobroma. Each Suppository contains  $1\frac{1}{2}$  grain of Extract = about  $\frac{1}{64}$  grain of alkaloid.

**TINCTURA BELLADONNÆ.** TINCTURE OF BELLADONNA.

1 of Liquid Extract of Belladonna diluted with Alcohol (60 p.c.) to yield 15.

Contains about 0·05 p.c. of alkaloid.

**Dose.**—5 to 15 minims = 0·3 to 0·9 c.c.

Official in Austr. and Swiss, 1 in 10; Belg., Fr., Ital., Mex., Port. and Span., 1 in 5; U.S., 3 in 20; Russ., 1 in 12, dried leaves. Belg., Fr. and Port., 1 in 1, fresh leaves. All by weight, except U.S.

**UNGuentum BELLADONNÆ.** BELLADONNA OINTMENT.

8 of Liquid Extract of Belladonna evaporated to 1, and mixed with 9 of Benzoated Lard.

Contains 0·6 p.c. of alkaloid.

Official in Belg., Extract 1 in 10; Fr. (Pommade), Extract 4 in 30; Ital., Extract 10, Glycerin 5, Benzoated Lard 85; Mex. (Pomada), Extract 1, Lard, 7½, Port. (Pomada), aqueous Extract 1, Lard 9; (Forte) Alcoholic Extract 1, Lard 9. Span. (Pomada), Extract 1, Lard 5; U.S., Alcoholic Extract 1 in 10.

Not Official.

**CHLOROFORMUM BELLADONNÆ.**—Belladonna Root in powder, 20; percolate with Chloroform *q.s.* to yield 20.

Applied with equal parts of Camphor Liniment or Olive Oil, for painful rheumatism.

The lengthy process of B.P.C. might be expected to be a great improvement on the simple method of percolating the powdered root with Chloroform, as introduced in the very first (1864) edition of the *Companion*, but, as a matter of fact, no more Alkaloid is extracted.

It is well known that this preparation only extracts about half of the total Alkaloid. By mixing the Root (in No. 40 powder) with Slaked Lime and powdered Ammonium Carbonate, four-fifths of the alkaloid will appear in the first 1 in 1 percolate.

**COLLODUM BELLADONNÆ.** *Syn.*—**EMPLASTRUM BELLADONNÆ FLUIDUM (B.P.C.).**—Dissolve a quantity of Alcoholic Extract of Belladonna Leaf, equal to 44 grains of the alkaloid, in 9 fl. oz. of Alcohol (90 p.c.), and 9 fl. oz. of purified Ether; after twelve hours decant, and in the fluid dissolve 130 grains of Camphor and  $\frac{1}{2}$  oz. of Pyroxylin, then add a mixture of equal volumes of Alcohol (90 p.c.) and purified Ether, *q.s.* to yield 20 fl. oz.

**EMPLASTRUM BELLADONNÆ VIRIDE (B.P.C.).**—To a quantity

of Alcoholic Extract of Belladonna Leaf, containing 11 grains of the alkaloids, add as much Resin plaster as will make up the weight to 10 oz.

**EXTRACTUM BELLADONNÆ FOLII ALCOHOLICUM (B.P.C.).**—Percolate Belladonna Leaf in No. 60 powder with Alcohol (90 p.c.) until exhausted, distil, and then evaporate to the consistence of an extract. Ascertain the percentage of alkaloids by process given in *B.P.C.*

**GLYCERINUM BELLADONNÆ (B.P.C.).**—Green Extract of Belladonna, 8; boiling Distilled Water, 1; Glycerin to 16.

This is practically the same strength as *London* and *Middlesex*; it also appears in other Hospital Pharmacopæias, with varying quantities.

**Official in Belg., Fr. and Port., 1 Extract in 10.**

Used as a pigment for relieving pain and tension in acutely inflamed parts; also painted on the breasts to suppress secretion of milk.

**LINIMENTUM BELLADONNÆ COMP.**—Liniment of Belladonna, 7; Chloroform of Belladonna, 1; mix. For application to the loins in lumbago it should be sprinkled on impermeable piline (not *spongio piline*), and firmly pressed with the hands on the part for five minutes to ensure perfect contact; it should then be kept on for at least 10 or 12 hours.

Peter Squire, who suffered much from lumbago, found this more effectual and much more convenient than Belladonna Plasters.

**ETHEREAL TINCTURE OF BELLADONNA (Sawyer).**—Substitute Pure Ether for Rectified Spirit in the Liniment of B.P. '85.—L. '90, ii. 67.

### Not Official.

### BENZIN.

#### PETROLEUM BENZIN. PETROLEUM ETHER.

A purified distillate from American Petroleum. It is a transparent, colourless, highly inflammable liquid, possessing a characteristic odour.

U.S.P. describes it as boiling between 50° and 60° C. (122° to 140° F.) having sp. gr. 0·670 to 0·675 at 15° C. (59° F.)

**Solubility.**—Insoluble in Water, about 1 in 6 of Alcohol (90 p.c.); readily soluble in Ether, Chloroform, fixed and volatile Oils.

**Medicinal Properties.**—Used in seborrhœa, in acne, and generally for the purpose of dissolving off grease from the skin. It is inflammable, and must not be used near a light.

**Official in Ger. and Russ.**

**BENZOINUM.****BENZOIN.**

A balsamic Resin, obtained from *Styrax Benzoin* and probably from other species of *Styrax*; both Siam and Sumatra Benzoin are specially mentioned in B.P., but the latter very seldom complies with the Official characters.

**Solubility.**—The tears are as a rule wholly soluble 1 in 5 of Alcohol (90 p.c.); 1 in 1 of Ether; and in Solution of Potash. The mass contains impurities, which are left after treating it with Alcohol. The Solution in Alcohol or Ether is acid.

B.P. requires Benzoin to be almost entirely soluble in Alcohol (90 p.c.), but Sumatra Benzoin is rarely so.

**Medicinal Properties.**—Expectorant, styptic, anti-septic, used in making aromatic fumigating pastilles. The compound tincture is given internally for chronic bronchitis; the vapor or spray is used in chronic laryngeal and bronchial catarrh to check abundant secretion and cough; lint soaked in the compound tincture forms a styptic and anti-septic dressing for wounds. Has been recommended in anal fissure.

**Prescribing Notes.**—*If given in the form of mixture the Tincture should be emulsified with Mucilage of Gum Acacia, or yolk of Egg. A nice lotion to protect the face from the heat of the sun is made with Tincture of Benzoin 1, Rose Water 40.*

**Official Preparation.**—Tinctura Benzoini Composita. Used in the preparation of Acidum Benzoicum, Adeps Benzoatus, and Unguentum Cetacei.

**Not Official.**—Tinctura Benzoini, Insufflatio Benzoini, Unguentum Benzoini, Vapor Benzoini.

**Official** in all the Foreign Pharmacopœias, Fr. (Benjoin), Ger. Benzoe).

**TINCTURA BENZOINI COMPOSITA.** COMPOUND TINCTURE OF BENZOIN.

*B.P. Syn.*—FRIAR'S BALSAM. *N.O. Syn.*—TRAUMATIC BALSAM.

Benzoin, 8; prepared Storax, 6; Balsam of Tolu, 2; Socotrine Aloes  $1\frac{1}{2}$  (less  $\frac{1}{40}$ ) \*; macerated with Alcohol (90 p.c.) to yield 80.  
(1 in 10)

Although Sumatra Benzoin is permitted by the Pharmacopœia only Siam should be used, on account of its superior solubility.

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

\* To be exact, 16 grains are to be taken from every  $1\frac{1}{2}$  oz. of Aloes.

Official in Belg., Dan., Mex. (Tintura de Benjui Compuesta), Port., Swed. and U.S.; Fr., Teinture Balsamique; the tinctures vary considerably in composition and strength.

### Not Official.

**TINCTURA BENZOINI.** *Syn. TINCTURA BENZOINI SIMPLEX (B.P.C.).*—1 of Benzoin in powder, macerated with Alcohol (90 p.c.) q.s. to yield 10.

Official in Austr., Belg., Dan., Dutch, Fr., Ger., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S., 1 in 5; all by weight, except U.S. Swiss includes also Tinct. Benzoës Ætherea 1 in 5.

**INSUFFLATIO BENZOINI (Vigier).**—Tincture of Benzoin, 1; Boric Acid, 1; Starch Powder, 1. Mix, and let the Alcohol evaporate. Used as a snuff in coryza.—*T.G.* '88, 141.

**UNGMENTUM BENZOINI.**—Benzoin in fine powder, 1; Adeps, 4. Useful application for ulcers of the leg.—*L.* '87, ii. 351.

**VAPOR BENZOINI.**—Compound Tincture of Benzoin, 60 minims in a pint of Water at 140° for each inhalation.

A sedative for acute inflammation of the pharynx and larynx.

## BENZOL.

A colourless, inflammable, volatile liquid, containing about 70 p.c. of Benzene; obtained from coal-tar Naphtha. Sp. gr. 0.880 to 0.888. It must not be confused with Benzin from Petroleum (see page 128).

Introduced into B.P. as a solvent for indiarubber.

**Solubility.**—Insoluble in Water. Soluble in all proportions of absolute Alcohol, Chloroform and Ether.

**Medicinal Properties.**—Stated to be useful in the treatment of influenza and its complications.

Only the purcst crystallisable Benzol should be used for internal administration.

**Dose.**—For children 3 minims, adults 5 minims; prescribed in capsules every two or three hours, or in mixture. Benzol 80 minims, Alcohol (90 p.c.)  $\frac{1}{2}$  oz., Sp. Chloroformi 3 drm., Mucilage Trag. to 8 oz.:  $\frac{1}{2}$  oz. every three hours, in lemonade.—*B.M.J.* '92, i. 171; '93, ii. 1425; *L.* '92, i. 234.

A fatal case of poisoning caused by swallowing an ounce of Benzene.—*L.* '99, i. 1489.

Official in Swed.

### Not Official.

## BERBERIS.

The Bark of the root of *Berberis vulgaris*.

It contains the alkaloids, Berberine  $C_{20}H_{17}NO_4$ , and Oxyacanthine  $C_{19}H_{11}NO_3$ .

The dried stem of *Berberis Aristata* is Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies, also **Tinctura Berberidis**, 1 in 10 of Alcohol (60 p.c.), dose, 30 to 60 minims = 1·8 to 3·6 c.c.

**Medicinal Properties.**—A bitter tonic. Has been used with success in intermittent fevers.

It has also been used in India as a local application in affections of the eye.

**EXTRACTUM BERBERIDIS FLUIDUM.**—Made with Alcohol (60 p.c.). One fl. oz. of Extract is equal to one oz. of Bark.

**Dose.**—20 to 60 minims = 1·2 to 3·6 c.c.

**Liquor Berberidis Concentratus** (1 in 2), dose 30 to 60 minims, is Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

**BERBERINÆ PHOSPHAS.**—This is the most soluble salt of Berberine. Soluble 1 in 15 of Water; 1 in 9 of hot Water, but part separates out on standing; it is also thrown down as a yellow precipitate by excess of Alcohol.

**Dose.**—1 to 5 grains = 0·06 to 0·32 grammes.

### Not Official.

#### BETEL.

The Leaves of *Piper Betle* are official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies. It is largely employed in India as a masticatory in conjunction with Lime and the nut of *Areca Catechu*.

### Not Official.

#### BETULÆ OLEUM.

##### BIRCH TAR OIL.

*Syn.*—OLEUM RUSCI.

A bituminous liquid, obtained by destructive distillation of the Wood of *Betula alba* produced in Russia.

Official in Russ. as Pix Liquida.

**Oleum Betulinum Rectificatum.**—A light-brown Oil, obtained by the steam distillation of Birch Tar Oil. It has a sp. gr. of 0·900 to 0·920.

The active constituents of the Rectified Oil are probably Guaiacol and Cresol.—*P.J.* (3) xxi. 661.

**Solubility.**—Almost insoluble in Water, soluble in all proportions of Alcohol, Chloroform or Ether.

**Dose.**—3 to 8 grains = 0·2 to 0·52 grammes. Best given in pill.

Official in Dutch Supp.

**TINCTURA RUSCI** (*Hebra*).—Birch Tar Oil, 25; Oils of Lavender, Rue and Rosemary, of each 1; Ether, 36; Alcohol (90 p.c.), 36.

**UNGENTUM OLEI BETULÆ.**—Birch Tar Oil, 5 fl. dram.; Yellow Beeswax, 120 grains; melt the Beeswax, add the Oil, and stir till cold.—*British Skin*.

Used in psoriasis and dry eczema.

**Caution.**—The use of this Ointment in eczema demands care.

### Not Official.

#### BISMUTHUM.

Bi, eq. 207·30.

Bismuth in its crude state is generally impure; the Official salts, however, are required to give no reaction with a special test for Selenium and Tellurium.

**Official** in Belg., Fr., Ital., Mex. (*Bismuto*), Port. and Span.

**Official Bismuth Salts.**—Bismuthi Carbonas, Bismuthi Oxidum, Bismuthi Salicylas, and Bismuthi Subnitras.

**Not Official.**—Bismone (Colloidal Bismuth Oxide), Bismuthum Purificatum, Bismuthi Benzoas, Bismuthi Betanaphtholas (Orphol), Bismuthi et Cerii Salicylas, Bismuthi Citras, Bismuthi et Amonii Citras, Bismuthi et Cinchonidinae Iodidum (*Erythrol*), Bismuthi Di-thio-Salicylas (*Thioform*), Bismuthi Iodo-resorcin Sulphonas (*Anusol*), Bismuthi Methylenedigallas (*Bismal*), Bismuthi Nitratas, Bismuthi Oleas, Bismuthi Oxychloridum (*Pearl white*), Bismuthi Oxyiodogallas (*Airol*), Bismuthi Phenolas, Bismuthi Phosphas, Bismuthi Quinolini Sulphocyanidum (*Crurin*), Bismuthi Sulphis, Bismuthi Subgallas (*Dermatol*), Bismuthi Subiodidum, and Bismuthi Tribromophenolas (*Xeroform*).

### BISMUTHI CARBONAS.

#### BISMUTH OXYCARBONATE.

$(\text{Bi}_2\text{O}_2\text{CO}_3)_2 \cdot \text{H}_2\text{O}$ , eq. 1029·70.

A white or yellowish-white, odourless and tasteless amorphous powder.

**Solubility.**—Soluble with effervescence in Nitric Acid; insoluble in Water.

**Medicinal Properties.**—Similar to the Subnitrate, and often preferred to it.

**Dose.**—5 to 20 grains = 0·32 to 1·3 grammes.

**Prescribing Notes.**—*Suspended in mixture by Compound Tragacanth Powder.*

*Mucilage of Gum Acacia is not a good vehicle for Bismuth salts.*

*On standing, a compact mass forms at the bottom of the bottle, which is difficult to diffuse.*

*When Sodium Bicarbonate is to be given with a Bismuth salt, the Carbonate should be selected.*

*The following prescription is a good one for pyrosis : Bismuthi Carbuncatis, 2 drm.; Magnes. Carb. Levis, 1 drm.; Pulv. Tragac. Comp. 1 drm.; Aq. Flor. Aurant., Glycerini, of each 2 fl. drm.; Aquae Chloroformi, 1½ fl. oz.; Aquam ad 6 fl. oz. 3 to 4 tea-spoonfuls three times a day after meals.*

**Official Preparation.**—Trochiscus Bismuthi Compositus.

**Official in Dutch Supp., Mex., Port. and U.S.**

### **TROCHISCUS BISMUTHI COMPOSITUS. COMPOUND BISMUTH LOZENGE.**

2 grains of Bismuth Oxycarbonate, 2 grains Heavy Magnesium Carbonate, and 4 grains Precipitated Calcium Carbonate in each, with Rose basis.

**Dose.**—1 to 6 lozenges.

A modification, known as the **Gastric Antacid Lozenge**, has been recommended by Sir W. Roberts; the Bismuth is omitted and Sodium Chloride added.—*B.M.J.* '89, ii. 374.

**Official in Fr. and Port.,** 1½ grain in each.

### **BISMUTHI OXIDUM.**

BISMUTH OXIDE.

$\text{Bi}_2\text{O}_3$ , eq. 462·24.

A pale yellowish-white, amorphous powder.

**Solubility.**—Insoluble in Water; soluble in Nitric Acid mixed with half its volume of Water.

**Medicinal Properties.**—Similar to the subnitrate.

**Dose.**—5 to 20 grains = 0·32 to 1·3 grammes.

**Not Official.**—Bismuthi Oxidum Hydratum and Cremor Bismuthi.

**Official in Fr..**

**Not Official.**

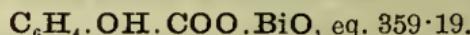
**BISMUTHI OXIDUM HYDRATUM.**—A white amorphous powder, soluble in an excess of Hydrochloric Acid and precipitated again on the addition of Water as Oxychloride. It mixes readily with Water to form a cream.

**CREMOR BISMUTHI.**—Hydrated Bismuth Oxide, 1; Water, 4. Rub together till smooth.

Under the name 'Intestin' a mixture containing Bismuth Oxide, Benzoic Acid and Naphthalene has been introduced.

**BISMUTHI SALICYLAS.**

BISMUTH SALICYLATE.



A whitish powder, but also supplied in crystals. It should contain 62 to 64 p.c. of Bismuth Oxide.

**Solubility.**—Insoluble in Water and Alcohol (90 p.c.).

**Medicinal Properties.**—Intestinal antiseptic and sedative; has been given with success in gastro-intestinal affections, particularly the summer diarrhoea of children.—*L.* '86, ii. 31, 1229; '88, i. 191, 1100; *T.G.* '86, 775; *B.M.J.E.* '92, i. 99.

**Dose.**—5 to 20 grains = 0·32 to 1·3 grammes.

**Prescribing Notes.**—*Given in cachets, or in a mixture suspended with Mucilage. The salt is dissoeiated by contact with Water, and then effervesces with an alkaline Carbonate; in such cases it is better to preseribe Bismuth Carbonate and Sodium Salicylate.*

Official in Dutch Supp., 60 to 65 p.c. of Bismuth Oxide; Fr. and Mex., 61 p.c.; Ger. and Ital., 63 p.c.; Russ., 60 p.c.; Dan., Swed. and Swiss, 60 p.c.; Norw., no p.c. given.

**Not Official.**

**BISMUTHI CERII SALICYLAS.**—A reddish-white powder, insoluble in Water and Alcohol (90 p.c.). Recommended in diarrhoea and dysentery.

**Dose.**—5 grains = 0·32 grammes.

The following mixture proposed by the Royal College of Physicians for use during the prevalence of cholera in 1892.—*L.* '92, ii. 682:—

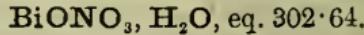
**Cholera Mixture.**—Bismuthi et Cerii Salicylas, 5 grains; Mist. Cretæ Aromat., 1 fl.oz.; Tinct. Camph. Co.,  $\frac{1}{2}$  fl. drm.; Tinct. Chloroformi Co., 20 drops; Spirit Ammon. Aromat., 20 drops; Ess. Menth. Pip., 10 drops.

Should this mixture disagree, or in 24 hours fail to give relief, the following mixture should be substituted and taken in 1 oz. doses every 3 or 4 hours:—

Acid Sulph. Aromat., 15 drops; Tinct. Camph. Co.,  $\frac{1}{2}$  drm.; Tinct. Chloroformi Co., 20 drops; Tinct. Coto, 20 drops; Syrupi Aurantii Flor., 1 drm.; Aq. Menth. Pip. ad. 1 oz.

**BISMUTHI SUBNITRAS.**

BISMUTH OXYNITRATE.



A heavy, white crystalline powder.

**Solubility.**—Insoluble in Water.

**Medicinal Properties.**—Sedative and astringent both internally and externally. It is highly useful in pyrosis, all forms of vomiting and irritative dyspepsia; in gastric ulcer, also in diarrhoea from any cause; usually combined with Soda, Magnesia, Opium, etc.; it renders the faeces leaden-grey in colour. It is recommended to be injected in gonorrhœa and leucorrhœa, 60 grains to the ounce of Water; the Bismuth is mixed with an equal quantity of Glycerin or suspended with Tragacanth. The addition of Bismuth to mixtures for diarrhoea of phthisis controls it better than other ingredients alone.

Externally it is used as a cosmetic, but is more or less blackened by an impure atmosphere; as lotion, powder or ointment in burns, eczema and other skin diseases when exudation and itching are present; also as an ingredient of Ferrier's Snuff in acute coryza and chronic rhinitis.

Has been recommended as a dressing for wounds.—*L.* '85, ii. 634; *T.G.* '85, 266; *B.M.J.* '01, ii. 811.

**Dose.**—5 to 20 grains = 0·32 to 1·3 grammes.

**Prescribing Notes.**—When prescribed in a mixture, it should be suspended with Compound Powder of Tragacanth, 1 drm. in a 6-oz. mixture. See Bismuthi Carbonas.

As Bismuth Oxynitrate in Water slowly parts with its Nitric Acid, the mixture is always acid, and this somewhat interferes with its suspension, and when prescribed with Sodium Bicarbonate it causes a slight but steady evolution of Carbonic Acid, which may cause the bottle to burst; these objections do not apply to the Bismuth Carbonate, which is therefore preferable in mixtures.

**Incompatibles.**—Effervescence ensues if prescribed in Water with Alkaline Bicarbonates. With Potassium Iodide double decomposition slowly ensues.

**Official Preparations.**—Used in the preparation of Liquor Bismuthi et Ammonii Citratis, and Bismuthi Oxidum.

**Not Official.**—Ferrier's Snuff, Glyceritum Bismuthi, Liquor Bismuthi Conc., Lotio Bismuthi, Mistura Bismuthi Comp., and Unguentum Bismuthi.

Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.

**LIQUOR BISMUTHI ET AMMONII CITRATIS.**  
SOLUTION OF BISMUTH AND AMMONIUM CITRATE. *B.P. Syn.*—  
LIQUOR BISMUTHI.

1 fl. drm. is equal to rather less than 3 grains of Bismuth Oxide.

**Dose.**— $\frac{1}{2}$  to 1 fl. drm. = 1·8 to 3·6 c.c.

A formula is given in U.S.N.F., using Glycerite of Bismuth

(see below), Alcohol and Distilled Water. 1 fl. dram. equals 1 grain Bismuth and Ammonium Citrate.

### Not Official.

**FERRIER'S SNUFF.**—Bismuth Subnitrate, 6 dram.; Morphine Hydrochloride, 2 grains; Gum Acacia in powder, 2 dram.—*L.* '76, i. 525.

It is described as a speedy and efficacious remedy for a recent cold in the head; each time the nostrils are cleared another pinch should be taken, using it frequently at first. One quarter to one half of this formula may be used in the twenty-four hours.

Glass insufflators are made to blow it up the nostrils.

**GLYCERITUM BISMUTHI (U.S.N.F.).**—A solution of Bismuth and Ammonium Citrate in Ammonia and Water containing Glycerin. 1 fl. dram. contains 16 grains of the salt.

**LIQUOR BISMUTHI CONC. (B.P.C.).**—Dissolve 7 of Bismuth Subnitrate in 10 of equal parts Nitric Acid and Distilled Water by the aid of a gentle heat; when cold add first a solution of Citric Acid 5, in Distilled Water 7, and subsequently stirring in a solution of Sodium Bicarbonate  $8\frac{3}{4}$ , in Distilled Water 7. Wash the precipitate free from Nitrates, and after draining dissolve it in solution of Ammonia 6, or a sufficiency, and add solution of Ammonium Citrate 12, Distilled Water, *q.s.* to yield 50.

**LOTIO BISMUTHI.**—Bismuth Subnitrate, 10 grains; Water, 1 fl. oz. A sedative lotion in cases of eczema.—*British Skin.*

**MIST. BISMUTHI COMP. (B.P.C.).**—Compound Tincture of Cardamoms, 3 fl. oz.; Chloroform, 70 minims; Liquid Extract of Nux Vomica, 135 minims; Diluted Hydrocyanic Acid, 320 minims. Mix and add Concentrated Solution of Bismuth, 15 fl. oz.; Morphine Hydrochloride, 8 grains, dissolved in 4 fl. dram. of Distilled Water; add finally Distilled Water, *q.s.* to yield 20 fl. oz.

Each fl. dram. contains 2 minims of Diluted Hydrocyanic Acid,  $\frac{1}{20}$  grain of Morphine Hydrochloride, and the equivalent of 5 minims of Tincture of Nux Vomica.

**Dose.**—20 to 30 minims = 1.2 to 1.8 c.c.

**UNGUENTUM BISMUTHI.**—Bismuth Subnitrate, 60 grains; Lard, 1 oz.

**BISMUTHI BENZOAS.**—A white powder, without taste, almost insoluble in Water. Given internally as an antiseptic and sedative. Used externally as an antiseptic dusting powder.

**Dose.**—5 to 20 grains = 0.32 to 1.3 grammes.

Is described in the Supplement of the French Codex as yielding on ignition 64 to 65 p.c. of Bismuth Oxide.

**BISMUTHI CITRAS.**—A white powder, usually containing 2½ p.c. of absorbed moisture.

**Solubility.**—Insoluble in Water; readily in Solution of Ammonia.

**Medicinal Properties.**—Similar to the Subnitrate.

**Dose.**—2 to 5 grains = 0·13 to 0·32 grammes.

**Official in U.S.**

**BISMUTHI ET AMMONII CITRAS.**—Small shining translucent scales, which yield Ammonia when warmed with solution of a fixed alkali.

**Solubility.**—1 in 1 of Water; sparingly in Alcohol (90 p.c.).

**Dose.**—2 to 5 grains = 0·13 to 0·32 grammes.

**Official in U.S.**

**BISMUTHI NITRAS** ( $\text{Bi}(\text{NO}_3)_3$ , eq. 392·04).—In colourless transparent crystals. Decomposed by Water, giving a white precipitate of Subnitrate. Soluble in Glycerin, but is slowly deposited from the solution when Water is added.

A glycerole can be made containing 60 grains to the ounce, but as an outward application in skin diseases the strength should in most cases not exceed 10 grains to the oz.—*M.T.* '76, ii. 646.

The salt should be dissolved without the application of heat.

**BISMUTHI OLEAS.**—Crystallised Bismuth Nitrate, 280 grains; dissolve cold in Glycerin 4 oz. by weight; add slowly Solution of Sodium Oleate, 20 fl. oz.; warm gently, wash by decantation, collect and dry. It forms a pearly-grey soft bland substance.

**Medicinal Properties.**—It is a reliable application in pustular eruptions and hyperæmia of the skin.—*B.M.J.* '84, ii. 751.

**BISMUTH-PHENOL** (Bismuth Phenate).—Prepared by adding a solution of Phenol in an alkali, to a solution of Bismuth Oxy-nitrate. A greyish-brown amorphous powder, insoluble in Water and Alcohol (90 p.c.). Recommended as an intestinal antiseptic.—*P.J.* (3) xxiv. 182; *C.D.* '93, ii. 576.

**Dose.**—5 to 20 grains = 0·32 to 1·3 grammes.

**BISMUTHI SUBGALLAS** (Dermatol).—A light-yellow insoluble powder, introduced as an odourless substitute for Iodoform.

Sometimes causes symptoms of Bismuth poisoning.

Given for gastric ulcer and diarrhœa in doses of 8 to 30 grains twice a day.—*L.* '97, ii. 404.

**Official in Austr. Add.**, 55 p.c. of  $\text{Bi}_2\text{O}_3$ ; Dutch Supp., 52 to 54 p.c.; Ger. and Swed., 52 p.c.; Russ., no p.c. given, it also includes a Tannate.

**Bismal** (Bismuth Methylendigallate).—Introduced as an astringent for internal administration in cases of diarrhœa. Insoluble in Water.

**Dose.**—1 to 4 grains = 0·06 to 0·26 grammes.

**BISMUTHI BETA-NAPHTHOLAS** (Orphol).—A reddish-brown powder, insoluble in Water. Recommended as an intestinal antiseptic and astringent, both for adults and children.

**Dose.**—5 to 20 grains = 0·32 to 1·3 grammes.

Experiments with Bismuth Subnitrate and Beta-naphthol as intestinal antiseptics.—*B.M.J.* '95, ii. 1483.

**BISMUTHI SUBIODIDUM.**—A brick-red amorphous powder, insoluble in Water.

Has been recommended as a substitute for Iodoform in the treatment of chancres and foul ulcers.—*T.G.* '87, 612; *Y.B.P.* '87, 286; *B.M.J.* '89, i. 783.

**Dose.**—5 to 10 grains = 0·32 to 0·65 grammes.

**BISMUTHI OXYIODOGALLAS** (Airol, Airoform and Airogen).—A combination of Dermatol with Iodine, introduced as a substitute for Iodoform, has attracted a good deal of attention as an antiseptic dressing. A bulky greyish powder, colourless and tasteless, insoluble in Water and Alcohol. Used as a dusting powder for ulcers, also mixed with Vaseline or Anhydrous Lanolin.—*B.M.J.* '98, i. 144.; *L.* '99, i. 240.

Sometimes badly tolerated.—*B.M.J.E.* '97, ii. 43.

Comparative experiments with Airol, Dermatol and Iodoform.—*B.M.J.E.* '97, i. 67.

Official in Dutch Supp.

**BISMUTHI TRIBROMOPHENOLAS** (Xeroform).—A yellow powder, insoluble in Water, recommended as a non-irritating antiseptic.

Used in wound-dressing in the Cuban war.—*L.* '99, i. 1509; and '99, ii. 1459; *B.M.J.E.* '99, ii. 88.

Bismone (Colloidal Bismuth Oxide); Bismuthi Iodo-Resorcin-Sulphonas (Anusol), supplied in Suppository form; Bismuthi Quinolini Sulphocyanidum (Crurin); Bismuthi Cinchonidinæ Iodidum (Erythrol); Bismuthi Di-thio-Salicylas (Thioform), Bismuthi Oxychloridum, Bismuthi Phosphas, and Bismuthi Sulphis, are combinations of Bismuth, mostly insoluble in Water, which have received notice in Medical Literature.

### Not Official.

#### BOLDO.

The Leaves and young Twigs of the *Peumus fragrans*, a native of Chili. The activity is due to a glucoside, Boldine, and a volatile Oil (sp. gr. 0·918).

Official in Fr., Mex. and Span.

**Medicinal Properties.**—Has been used in liver complaints and as a diuretic; as a stimulant to digestion; also as a hypnotic.—*B.M.J.* '85, ii. 1134; '88, i. 918.

Boldine has been given as a hypnotic in capsules containing 3 grains.

**TINCTURA BOLDO.**—Boldo Leaves, 1; Alcohol (60 p.c.), 10. Digest seven days, and filter.

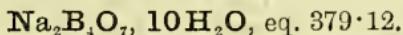
**Dose.**—10 to 40 minims = 0·6 to 2·4 c.c.

Official in Fr. and Mex., 1 and 5; by weight.

#### BONE MARROW. See MEDULLA RUBRA.

**BORAX.**

BORAX.

*B.P. Syn.—BIBORATE OF SODIUM.*

Transparent colourless crystals, usually efflorescent.

Though this salt is acid in constitution, it gives alkaline reactions with Litmus and Methyl-orange.

**Solubility.**—1 in 25 of Water ; 2 in 1 of boiling Water ; 2 oz. of Borax are dissolved by 2 fl. oz. of Glycerin, and the solution measures only  $3\frac{1}{4}$  fl. oz. By the aid of 1 of Glycerin, 1 part of Borax will dissolve in 12 of Water. Insoluble in Alcohol (90 p.c.) .

Borax is decomposed by Glycerin, forming a solution which reddens Litmus, and effervesces with Sodium Bicarbonate.

**Medicinal Properties.**—Antiseptic and parasiticide ; mildly astringent. A local sedative to inflamed mucous membrane. As a lotion 10 grains to the oz. ; as a gargle (saturated solution) about 20 grains to the oz., and as an injection in leucorrhœa and gonorrhœa. The Glycerin of Borax is used as a paint for the throat, for cracked nipples, and for erythematous skin eruptions. The Glycerin or Mel is used in aphthous ulceration of the tongue or buccal mucous membrane, and for mercurial salivation.

Internally in epilepsy (*L.* '93, ii. 1586 ; '95, ii. 755), but is inferior to Bromide and has many inconveniences (*B.M.J.E.* '95, i. 4).

**Dose.**—5 to 20 grains = 0.32 to 1.3 grammes.

**Prescribing Notes.**—*For internal use it is generally given in solution. Should not be prescribed with salts of Cocaine or other Alkaloids.*

**Incompatibles.**—Mineral Acids and most of their metallic salts, also Alkaloidal salts. Mucilage of Gum Acacia.

**Official Preparations.**—Glycerinum Boracis and Mel Boracis.

**Not Official.**—Liquor Boracis, Liquor Sodii Boratis Compositus, Lotio Boracis, Tinctura Myrrhae et Boracis, Trochisci Boracis, and Unguentum Boracis.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

**GLYCERINUM BORACIS. GLYCERIN OF BORAX.**

Borax 1, Glycerin 6. (By weight 1 in  $8\frac{1}{2}$ , measure 1 in  $6\frac{1}{2}$ ).

This is not merely a solution of Borax in Glycerin ; the Glycerin splits up the Biborate into free Boric Acid and a more basic

Borate with secondary reactions. It reddens Litmus paper, and effervesces on the addition of Sodium Bicarbonate.

**Dose.**— $\frac{1}{2}$  to  $1\frac{1}{2}$  fl. dram. = 1·8 to 5·4 c.c.

20 minims given in diarrhoea of infants.—*L.* '89, ii. 739.

**Official in** Dutch Supp., 1 and 9; Mex. (*Glicerina Boratada*), 1 and 19; Norw. (*Linctus boracinus*), 1 and 9; all by weight.

### MEL BORACIS. BORAX HONEY.

Borax, 2; Glycerin (by weight), 1; Clarified Honey (by weight), 16. (about 1 in 7 by volume)

**Official in** Mex. (*Colutorio boratado*), Borax 1, Honey 1; Swiss, 1 in 10; the ingredients vary slightly.

### Not Official.

**LIQUOR BORACIS** (Thompson's Fluid).—Borax, 1; Glycerin, 2; Water, 2. Half an ounce to be mixed with 4 fl. oz. of warm Water before use.—*Guy's*.

**LIQUOR SODII BORATIS COMPOSITUS** (Dobell's Solution) (*U.S.N.F.*).—Sodium Borate, 15; Sodium Bicarbonate, 15; Carbolic Acid, 3; Glycerin, 35; Water, *q.s.* to yield 1000.

**LOTIO BORACIS.**—Borax 1, Rose Water 24; or Borax 1, Glycerin 1, Rose Water 16.

**TINCTURA MYRRHÆ ET BORACIS.**—Myrrh, 1; Eau de Cologne, 16; Borax, 1; Water, 3; Syrup, 3.

**TROCHISCI BORACIS.**—Each Lozenge contains 3 grains of Borax. Mildly detergent, useful in thrush and muscular weakness of the throat.—*Throat*.

**UNGUENTUM BORACIS.**—Borax, 1; Spermaceti Ointment, 8.

For chilblains or cracked nipples.

### Not Official.

### BROMUM.

#### BROMINE.

**Br**, eq. 79·35.

A liquid non-metallic element, obtained from sea water and from some saline springs, sp. gr. 2·97 to 3·14.

**Solubility.**—In Water, 1 in 30 by weight. Readily soluble in Glycerin, Alcohol (90 p.c.), Ether, Chloroform, and Carbon Bisulphide, with gradual decomposition of the solvents.

**Medicinal Properties.**—Deodoriser and disinfectant. Used medicinally as a sedative in the form of the Bromides and Diluted Hydrobromic Acid.

**Official Preparations.**—Used to prepare Potassii Bromidum and Sodii Bromidum.

**Official** in Belg., Dutch Supp., Fr. (Brome), Ger., Jap., Mex. (Bromo), Ital., Port., Russ., Span., Swiss and U.S.

**HYPOBROMITE SOLUTION FOR UREA-ESTIMATION.**—Prepare a stock Solution of Soda (sp. gr. 1·310) by dissolving 3½ oz. of pure Sodium Hydroxide in 9 fl. oz. of Water. To 7 fl. dram. of this add 42 minims (about 114 grains) of Bromine when the Solution is wanted for use.

**Note.**—*The vapour of Bromine is very irritating to the air-passages. It can be weighed by taking the difference between the weight of the bottle before and after pouring some out, and calculating the quantity of Soda Solution required.*

Glass tubes (hermetically sealed) containing the above quantity of Bromine are made.

In place of 42 minims of Bromine, 2 fl. dram. of the following concentrated solution of Bromine can be used to 6 fl. dram. of the Soda Solution.

**Liquor Bromi Conc.**—Bromine, 168 minims = 450 grains; Potassium Bromide, 240 grains; Water, to 1 fl. oz. Mix the Bromine and Potassium Bromide and add the Water gradually with constant stirring until 1 fl. oz. of solution is obtained.

**BROMIPIN.**—A pale yellow oily liquid. It is a Bromine addition-compound of the fatty acid of Sesame Oil, containing about 33 p.c. of Bromine.

Introduced for the treatment of epilepsy, in doses of 1 fl. dram.

**Prescribing Notes.**—*It may be given in capsules, or in emulsion with Mucilage of Gum Acacia.*

**BROMOFORM** ( $\text{CHBr}_3$ ).—A colourless liquid, about twice as heavy as Chloroform, soluble 1 in 800 of Water, soluble in all proportions of Alcohol (90 p.c.), of Ether and of Almond Oil; about 1 in 80 of Glycerin.

*Ph. Ger.* maximum single dose, 0·5 grammie; maximum daily dose, 1·5 grammie.

**Prescribing Notes.**—*It is but slightly soluble in Water, and owing to its high sp. gr. it is difficult of suspension, and from this cause accidents have occurred from patients taking an excessive quantity in the last dose of a mixture. For oral administration it is best dissolved in Almond Oil, which can then be put into capsules or made into an emulsion as below.*

It decomposes and becomes yellow on exposure to sunlight, and should not then be dispensed.

Given for the relief of whooping-cough in doses of 2 to 5 drops three or four times a day; in some cases it caused languor and drowsiness, and an over-dose produced toxic symptoms.—*L.* '90, ii. 139; '93, i. 1062; *Pr.* xlvi. 47; *T.G.* '90, 694; '91, 214.

**Official** in Dutch Supp. and Ger.

**Emulsio Bromoform.**—Bromoform, 40 minims; Ol. Amygdal, 70 minims; Gum Acac., 40 grains; Syrup Simp., 100 minims; Aqua ad., 1 fl. oz. Dissolve the Bromoform in the Oil of Almonds and emulsify in the usual way.

**BROMETHYLFORMINE (Bromaline).**—A white crystalline powder, very soluble in Water. Has been recommended as a nervous sedative in the treatment of epilepsy.

**Dose.**—5 to 30 grains = 0·82 to 2 grammes.

**Elixir Bromyl (Squire).**—Contains 10 grains in the fl. dram.

### Not Official.

### BRYONIA.

The Root of *Bryonia alba* and of *Bryonia dioica*.

**Medicinal Properties.**—In large doses it is an active hydragogue cathartic, in small doses it is given in pleurisy. It has also been used as a haemostatic in menorrhagia.—*L.* '88, ii. 438.

It has been used for many years by the homeopaths in the form of tincture.

The active principle is a glucoside.

**Official in Belg., Fr., Mex., Port., Span. and U.S.**

**TINCTURA BRYONIÆ (B.P.C.).**—Made from fresh Bryony Root of such a strength that 10 fl. oz. shall represent 1 oz. of the dried root and shall contain 60 p.c. by volume of Alcohol.

Fresh Bryony Root yields on an average 32 to 40 p.c. of dried root.

**Dose.**—1 to 10 minims = 0·06 to 0·6 c.c.

**Official in Mex., 1 and 5, dried root; U.S., 1 dried root in 10; Fr. (Alcoolature), 1 fresh root in 1.**

**Antidotes.**—An emetic; stimulants, Brandy or Spirit of Sal Volatile.

### BUCHU FOLIA.

### BUCHU LEAVES.

*N.O. Syn.*—BUCCO; DIOSMA.

The dried Leaves of *Barosma betulina*, contain a volatile oil, a bitter principle, and a mucilage.

**Medicinal Properties.**—Tonic, stomachic, diuretic, and diaphoretic. Given chiefly in complaints of the urinary organs, as an antiseptic in chronic cystitis, and in irritation of the bladder and urethra. Also in dyspepsia, chronic rheumatism, and dropsy.

**Dose.**—Usually given in the form of Infusion or Tincture, q.v.

**Official Preparations.**—Infusum Buchu and Tinctura Buchu.

**Official in Belg., Dan., Dutch, Fr., Mex., Norw., Port., Span. and U.S.**

**INFUSUM BUCHU.** INFUSION OF BUCHU.

Buchu, 1; boiling Distilled Water, 20: infuse 15 minutes.  
(1 in 20)

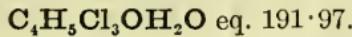
**Dose.**—1 to 2 fl. oz. = 28·4 to 56·8 c.c.

**TINCTURA BUCHU.** TINCTURE OF BUCHU.

1 of Buchu Leaves, in No. 20 powder percolated with Alcohol (60 p.c.) to yield 5. (1 in 5)

**Dose.**— $\frac{1}{2}$  to 1 fl. dr. = 1·8 to 3·6 c.c.

Official in Fr. and Mex., 1 and 5; both by weight.

**BUTYL-CHLORAL HYDRAS.****BUTYL-CHLORAL HYDRATE.**

White crystalline scales of a silky lustre, with a somewhat fruit-like odour and bitter taste.

Butyl-Chloral Hydrate was formerly known as Croton-Chloral Hydrate.

**Solubility.**—1 in 44 of Water; 1 in 1 of Glycerin (very slowly); 5 in 3 of Alcohol (90 p.c.); 1 in 20 of Olive Oil; 1 in 2 of Ether; 1 in 20 of Chloroform.

Some books give the solubility as 4 in 1 of Glycerin, but this is incorrect.

**Medicinal Properties.**—Analgesic; is frequently but not always an efficient remedy in neuralgia of the face and head, and in tic-douloureux, concentrating its action on the fifth nerve.

**Dose.**—5 to 20 grains = 0·32 to 1·3 grammes.

**Prescribing Notes.**—Generally given in the form of pills made with a little Compound Powder of Tragacanth and Syrup. The addition of Alcohol or Glycerin to aqueous mixtures increases its solubility.

**Not Official.**—Mistura Butyl-Chloral, Pilula Butyl-Chloral, Syrupus Butyl-Chloral.

**Antidote.**—Picrotoxin  $\frac{1}{20}$  grain = 0·003 grammes.

Official in Dan. and Dutch Supp.

**Not Official.**

**MISTURA BUTYL-CHLORAL.**—Butyl-Chloral Hydrate, 5 grains; Glycerin, 15 minims; Chloroform Water,  $\frac{1}{2}$  fl. oz.; Water to 1 fl. oz.

**PILULA BUTYL-CHLORAL.**—Butyl-Chloral Hydrate, 5 grains;

Compound Powder of Tragacanth, 1 grain; Syrup *q.s.*; in 1 pill.

**SYRUPUS BUTYL-CHLORAL (B.P.C.).**—Butyl-Chloral Hydrate, 16 grains; Syrup, *q.s.* to make 1 fl. oz.; dissolve by the aid of heat.

**Dose.**—1 to 4 fl. dram. = 3·6 to 14·2 c.c.

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### Not Official.

#### BYNE. MALT.

Good Malted Barley is tolerably uniform in diastase, and the widely differing results published from time to time by different analysts as to the strength of commercial Extracts must be due partly to a destruction of diastase in the manufacture of the Extracts, and partly to an ambiguity attaching to the phrase 'conversion of Starch.'

**EXTRACTUM BYNES.** *Syn.* — **EXTRACTUM MALTI.** MALT EXTRACT.

Is made by infusing or mashing ground Malt in Water at a temperature under 160° F., preferably 140° F., filtering and evaporating the solution in vacuo to the consistence of a thick syrup. It is more convenient to use when it is evaporated only to a thin syrup, but in that condition the Extract is more liable to undergo fermentation.

An **Extractum Malti**, resembling the above, has been introduced in B.P.C.

**Medicinal Properties.**—Malt Extract is prescribed as a nutrient in wasting diseases, and where the digestion is weak it is given for its diastasic value of converting Starch into Maltose and Dextrin. It is best mixed with the farinaceous food before entering the stomach, but it may also be given by itself just before a meal. It is also given with Cod Liver Oil. It is useful for covering the taste of nauseous drugs.

**Dose.**—A teaspoonful to a tablespoonful.

It is very useful when mixed with baked wheaten flour to form foods for infants and invalids when a certain amount of pre-digestion is required.

For a substance with similar properties see **TAKA-DIASTASE**.

U.S.P. 1882, ordered the Malt to be macerated in cold Water for six hours, then digested for an hour at 131° F., strained and evaporated at a temperature not exceeding 131° F. to the consistence of Honey. This contained active Diastase. It was omitted in U.S. 1893.

**LIQUID MALT.**—Malt Extract, sp. gr. 1·375, to which diluted Alcohol is added, sufficient to produce a liquid, sp. gr. 1·250, containing 7·3 p.c. of Alcohol (90 p.c.) by weight, equal to about 15 p.c. Proof Spirit.

Preparations somewhat similar to this are sold as **Fluid Extract of Malt, Bynin, etc.**

**EXTRACTUM MALTI FLUIDUM (U.S.N.F.).**—Malt in coarse powder 100, percolated with a mixture of Alcohol (94 p.c.) 1 and Water 3, until the percolate weighs 75.

**MALT EXTRACT WITH COD LIVER OIL.**—This is supplied under several well-known brands, but can be prepared extemporaneously by thinning ordinary Malt Extract with 10 to 15 p.c. of Water, heating the mixture to 120° F., adding the Oil and shaking thoroughly until mixed. The commercial product contains from 20 to 30 p.c. of Cod Liver Oil.

Examination of commercial samples gave from 20 to 30 p.c. of Oil by volume.—*P.J.* (3) xxv. 162.

**Prescribing Note.**—Usually given in Milk.

**EXTRACTUM MALTI CUM OLEO MORRHUÆ (B.P.C.).**—Extract of Malt, 17 fl. oz.; Cod Liver Oil, 2 fl. oz. Heat the extract to 110° F., and pour it into a warm mortar; add the Oil gradually and with constant trituration.

**EXTRACTUM MALTI FERRATUM.**—Iron Pyrophosphate, 2; Water, 3. Dissolve and add Extract of Malt, 95.—*Guy's.*

**Dose.**—1 to 4 drm. = 3·6 to 14·2 c.c.

Each fl. dram. contains about 1 grain Iron Pyrophosphate.

**TAKA-DIASTASE.**—A powder of a light brown colour, possessing a nutty taste. Obtained by the cultivation of a fungus of the species *Eurotium Oryzae*. It possesses high diastasic properties, readily converting over a hundred times its weight of Starch at body temperature.

Stated to be especially indicated as an artificial digestant in those cases in which there is a deficiency of saliva. Also to have been found useful in cases of hyperacidity of the stomach and in gouty dyspepsia.—*L.* '96, i. 856; '03, ii. 1052; *A.J.P.* '98, 138.

**Dose.**—5 to 10 grains = 0·32 to 0·65 gramme, in capsules in the middle of or immediately following a meal.

**Diastase** from Malt is Official in Fr. Supp.

## CADINUM OLEUM.

OIL OF CADE.

*B.P.* *Syn.*—JUNIPER TAR OIL.

A brownish or dark brown, viscous fluid, of an oily nature, with a tarry odour and an empyreumatic and somewhat bitter taste; a product of the dry distillation of the Branches and Wood of *Juniperus Oxycedrus*, and other species. It contains a high percentage of Cadinene.

**Solubility.**—Mixes in all proportions with Chloroform and Ether; partially soluble in Alcohol (90 p.c.); slightly soluble in Water.

**Medicinal Properties.**—An agreeable form of Tar. Used as a stimulant in cases of psoriasis and of chronic eczema.

**Prescribing Notes.**—*It is used in the form of Ointment; the Oil mixed with equal parts of Yellow Wax, and further diluted with Lard or Vaseline if required.*

**Official in Austr., Belg., Dan., Fr., Hung., Ital., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

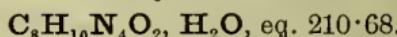
In Balzer's Cade Baths the oil is emulsified before being added to the bath.

## CAFFEINA.

### CAFFEINE.

*B.P. Syn.—THEINE.*

*N.O. Syn.—COFFEINA.*



A feebly basic alkaloid, obtained from the prepared and dried Leaves of *Camellia Thea*, the dried seed of *Coffea Arabica*, and found also in other plants. It is chemically allied to Theobromine, being **Methyl-theobromine**.

The quantities yielded are about as follows: Tea Leaves, 3 to 4 p.c., Coffee Seeds, 1 p.c., Guarana, 5 p.c., Maté or Paraguay Tea, 1 p.c., Kola Nut, 2 to 3 p.c.

**Solubility.**—1 in 68 of Water; 1 in 40 of Alcohol (90 p.c.); 1 in 7 of Chloroform; 1 in 400 of Ether; 1 in 1 of boiling Water.

**Medicinal Properties.**—A valuable heart tonic and diuretic, especially in cases of loss of compensation with cardiac dropsy.

Given in 1 grain doses every hour for migraine and hemicrania; also in the form of **Effervescent Caffeine Citrate** (1 grain in each drachm), **Pulv. Phenacetin Comp.** and **Pulv. Phenobrom. Comp.**

It is eliminated but slowly by the kidneys, and its action on the heart is cumulative.—*B.M.J.E.* '00, i. 35.

Used by malingering soldiers to produce symptoms of cardiac disease.—*L.* '00, i. 1406.

Diuretic action of *Caffeine* and *Theobromine*.—*B.M.J.* '01, ii. 7.

Specially valuable in spasmotic asthma and allied affections. In 5 grain doses every four hours.—*Pr. liv.* 318.

**Dose.**—1 to 5 grains = 0·06 to 0·32 grammes.

*Ph. Ger.* maximum single dose, 0·5 grammes; maximum daily dose, 1·5 grammes.

**Prescribing Notes.**—*Given in cachets, in mixtures, or in*

pills made with 'Diluted Glucose'; also in the form of effervescent preparations. For hypodermic use 20 grains can be dissolved in 60 minimis of Water by the aid of 20 grains of Sodium Salicylate, or 20 grains of Sodium Benzoate. See also Caffeinæ Sodio-Salicylas, and Caffeinæ Sodio-Benzoas.

**Official Preparations.**—Caffeinæ Citras, Caffeinæ Citras Effervescens.

**Not Official.**—Elixir Caffeinæ, Caffeinæ Hydrobromidum, Caffeinæ Di-iodo-Hydriodidum, Caffeinæ Sodio-Benzoas, Caffeinæ Sodio-Salicylas, Caffeinæ Valerianas, Æthoxycaffeinum.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Port., Russ., Span., Swed., Swiss and U.S.**

### CAFFEINÆ CITRAS. CAFFEINE CITRATE.

An unstable combination of Caffeine and Citric Acid, which is broken up in the presence of Water.

**Solubility.**—1 in 32 of Water; 1 in 22 of Alcohol (90 p.c.); 1 in 10 of a mixture of 2 parts Chloroform with 1 part Alcohol (90 p.c.).

**Dose.**—2 to 10 grains = 0·13 to 0·65 grammes.

**Official in Hung., Mex., Span., Swiss and U.S.**

### CAFFEINÆ CITRAS EFFERVESCENS. EFFERVESCENT CAFFEINE CITRATE.

Contains about 2 p.c. of Caffeine (4 p.c. of Caffeine Citrate), or nearly 9 grains of Caffeine in the ounce.

**Dose.**—60 to 120 grains = 4 to 8 grammes.

**Official in U.S., containing 1 p.c. of Caffeine.**

For other Caffeine Citrate Effervescing Compounds, see PHENACETIN and PHENAZONE.

### Not Official.

**ELIXIR CAFFEINÆ (U.S.N.F.).**—Prepared with Caffeine, dilute Hydrobromic Acid, Syrup of Coffee and Aromatic Elixir. Each fl. dram contains 1 grain Caffeine.

**CAFFEINÆ HYDROBROMIDUM.**—A crystallisable salt, which has been recommended (*P.J.* (3) xxiii. 220) as superior to the B.P. Citrate, but as it is instantly decomposed into free Caffeine and Hydrobromic Acid on contact with Water, it has obviously no advantage over the Citrate in this respect.

**Solubility.**—1 in 52 of Water.

**Dose.**—1 to 4 grains = 0·06 to 0·26 grammes.

**Prescribing Notes.**—It is also prescribed as Effervescent Caffeine Hydrobromide containing 1 or 2 grains of the Hydrobromide in each drachm.

**Caffeinæ Hydrobromidum Effervescens (B.P.C.).**—Contains 2 grains of the Hydrobromide in 50 grains of granules.

**CAFFEINÆ DI-IODO-HYDRIODIDUM** (*Syn. CAFFEINE TRI-IODIDE*).—It forms prismatic crystals, steel-blue by reflected and red by transmitted light. On the addition of Water it is slowly decomposed with liberation of Iodine.

**Medicinal Properties.**—Given with much success in the treatment of gout, the relief afforded being immediate and effective. Iodine splits up the Uric Acid from the combinations into which it has entered.

**Dose.**—1 to 3 grains in pill, with Glucose and Pulv. Acaciæ.

**CAFFEINÆ SODIO-BENZOAS.**—A white, inodorous, amorphous powder, containing about 50 p.c. of Caffeine.

**Solubility.**—1 in 2 of Water, 1 in 30 of Alcohol (90 p.c.).

**Dose.**—1 to 5 grains = 0·06 to 0·32 grammes.

**Prescribing Notes.**—*It is employed as a soluble salt of Caffeine, but principally by hypodermic injection.*

**Official in Austr. Add.** (44 p.c. Caffeine); Ital. and Swiss (43 to 46 p.c. Caffeine).

**CAFFEINÆ SODIO-SALICYLAS.**—An amorphous white powder, containing about 50 p.c. of Caffeine.

**Solubility.**—1 in 1 of Water; 1 in 28 of Alcohol (90 p.c.).

**Ph. Ger.** maximum single dose, 1 gramme; maximum daily dose, 3·0 grammes.

**Official in Dutch** (Salicylas Natricus cum Coffeino); Dan., Ger., Hung., and Norw. (Salicylas Natrico-Coffeicus); Russ. (Coffeinum Natrio-Salicylicum); and Swiss.

**Medicinal Properties.**—The same as Caffeine, but being much more soluble is more easily absorbed; it is also suitable for hypodermic injection. Has been used in sea-sickness.—*B.M.J.* '87, ii. 768.

**Dose.**—2 to 15 grains = 0·13 to 1 gramme.

**Ph. Ger.** maximum single dose, 1 gramme; maximum daily dose, 3 grammes.

**CAFFEINÆ VALERIANAS.**—A variable mixture of Valerianic Acid and Caffeine.

A good preparation is obtained by absorbing 1 of Anhydrous Valerianic Acid by 4 of Anhydrous Caffeine.

**Dose.**—1 to 3 grains = 0·06 to 0·2 grammes.

**ÆTHOXYSALICYLIC ACID.**—A compound of Caffeine, containing an additional Æthoxyl group. Colourless, crystalline needles, less soluble in Water than Caffeine, readily soluble in Alcohol. Heart tonic and diuretic; also narcotic. Given with Sodium Salicylate in migraine and trigeminal neuralgia. Subcutaneously it acts as an anaesthetic. It readily forms soluble double salts with Sodium Benzoate and Salicylate.

**Dose.**—1 to 3 grains = 0·06 to 0·2 grammes.

The following have also received notice in Medical Literature:—Caffeine-chloral, Caffeine Tri-bromide, Caffeine Sodium Iodide, Caffeine Sulphate, Caffeine Vanadate, Symphoral L.

(Lithium Caffeine Sulphonate), Symphoral N (Sodium Caffeine Sulphonate), and Symphoral Sr (Strontium Caffeine Sulphonate).

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## CAJUPUTI OLEUM.

### OIL OF CAJUPUT.

A volatile Oil, green in colour, and having an odour resembling Eucalyptus, distilled from the Leaves of *Melaleuca Leucadendron*.

**Solubility.**—In all proportions of Alcohol (90 p.c.).

**Medicinal Properties.**—A powerful topical and general stimulant, antispasmodic and diaphoretic. Efficacious in flatulent colic, hysteria, and other spasmodic and nervous affections, and in debility. Externally, diluted with Olive Oil (1 to 2), or with Linimentum Terebinthinæ, to allay chronic rheumatism and gout pains. Applied on lint for toothache.

**Dose.**— $\frac{1}{2}$  to 3 minims = 0·03 to 0·18 c.c.

**Prescribing Notes.**—Given on Sugar, or in Pill or in the form of Spirit of Cajuput. Occasionally as much as 10 minims are given in a mixture. See below.

**Official Preparations.**—Spiritus Cajuputi; contained in Linimentum Crotonis.

**Official in** Belg., Dan., Dutch (also Depuratum), Fr., Ital., Jap., Norw., Port., Russ., Span., Swed., Swiss and U.S.

### SPIRITUS CAJUPUTI. SPIRIT OF CAJUPUT.

Oil of Cajuput, 1; Alcohol (90 p.c.), q.s. to yield 10.

**Dose.**—5 to 20 minims = 0·3 to 1·2 c.c.

### Not Official.

**MISTURA CAJUPUTI.**—Oil of Cajuput, 80 minims; Compound Spirit of Orange (U.S.P.), 80 minims; Powdered Tragacanth, 8 grains; powdered Gum Acacia, 120 grains; Glycerin, 1 fl. oz.; Chloroform Water to 8 oz.

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### Not Official.

## CALAMINA PRÆPARATA.

### PREPARED CALAMINE.

Native Zinc Carbonate, calcined in a covered earthenware crucible at a moderate temperature, powdered and freed from gritty particles by elutriation. Genuine Calamine has a yellowish-grey colour; the reddish varieties are generally made on a basis of Barium Sulphate.

**Medicinal Properties.**—Mildly astringent, used in face lotions and dusting powders.

**LINIMENTUM CALAMINÆ.**—Prepared Calamine, 20 grains; Zinc Oxide, 15 grains; Solution of Lime, 2 drm.; Water, 2 drm.; Olive Oil to 1 fl. oz.—*Guy's.*

Variations of this are given in Great Northern, Middlesex and University Hospital Pharmacopœias. The following is sometimes prescribed, but unless treated in the manner here described it is difficult to dispense. Calamine, 3 drm.; Zinc Oxide, 2 drm.; Lime Water, 4 fl. oz.; Olive Oil, 4 fl. oz.

*Rub the powders with the Lime Water in a mortar to a smooth cream, and then add the whole of the Oil at once and stir together.*

**LOTIO ZINCI OXIDI.**—Zinc Oxide, 60 grains; Prepared Calamine, 60 grains; Glycerin, 60 minims; Water, 1 fl. oz.—*British Skin.*

A mild astringent in chronic eczema and acne rosacea.

Most of the Hospital Pharmacopœias give a formula under the heading Lotio Calaminæ or Lotio Zinci Oxidi.

**UNGUENTUM CALAMINÆ.**—Prepared Calamine, 120 grains; Benzoated Lard, 1 oz.—*British Skin.*

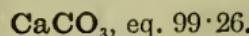
**CERATUM CALAMINÆ (Ph. Lond.).**—Calamine,  $7\frac{1}{2}$ ; Bees-Wax,  $7\frac{1}{2}$ ; Olive Oil, 20.

*Ph. Edin.*—Calamine, 1; Simple Cerate, 5; commonly known as *Turner's Cerate*.

## CALCII CARBONAS PRÆCIPITATUS.

PRECIPITATED CALCIUM CARBONATE.

*B.P. Syn.*—PRECIPITATED CHALK.



A white, inodorous, tasteless powder.

**Solubility.**—Insoluble in Water and Alcohol. Soluble with effervescence in dilute mineral Acids and some of the organic Acids.

**Medicinal Properties.**—Antacid, astringent and desiccant. Used in dyspepsia with acidity; valuable in diarrhoea; as a dusting powder in eczema, and for ulcers and burns.

**Dose.**—10 to 60 grains = 0·65 to 4 grammes.

**Official Preparation.**—Used in the preparation of *Trochiscus Bismuthi Compositus*.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Swed., Swiss and U.S.**

**CRETA PRÆPARATA.** *See p. 238.*

**CALCII CHLORIDUM.****CALCIUM CHLORIDE.**

Fused, white, slightly translucent, hard fragments, having a sharp saline taste. Very deliquescent.

**Solubility.**—1 in 1 of Water; 1 in 3 of Alcohol (90 p.c.).

**Medicinal Properties.**—Alterative and deobstruent; given in glandular enlargements, especially those of tubercular origin. It increases the coagulability of the blood, and is therefore used in gastric and intestinal hemorrhage, also in aneurisms. Has been given internally also for chilblains, 20 grains night and morning.

Given in pneumonia—*Pr.* 1. 263; liii. 343.

10 to 20 grains every 4 hours given in haemophilia.—*L.* '97, ii. 1061; *L.* '98, ii. 144; *B.M.J.* '02, i. 1141; *P.J.* '03, i. 525.

A small pledget of wool soaked in a solution containing 30 grains to the ounce of Water, used successfully in haemophilia.—*L.* '03, i. 517.

**Dose.**—5 to 15 grains = 0·32 to 1 gramm.

**Prescribing Notes.**—*This Salt has a very unpleasant taste which is difficult to cover. Elixir Calcii Chloridi accomplishes this better than Liquorice.*

**Incompatibles.**—Lime salts and Potassium salts are mutually antagonistic physiologically.—*B.M.J.* '87, ii. 1033.

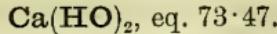
**Official Preparations.**—Used in the preparation of Æther Purus.

**Official in U.S.; Hung., Calcium Chloratum Fusum; Belg., Chloruretum Calcii; Port., Chloreto de Calcio; Fr., Chlorure de Calcium; Mex., Cloruro de Calcio; Span., Cloruro Calcico.**

**ELIXIR CALCII CHLORIDI.**—Chloride of Calcium, 60 grains; Citric Acid, 20 grains; Aromatic Elixir (*U.S.P.*) to 1 fl. oz.

**CALX CHLORINATA.** See *p.* 158.**CALCII HYDRAS.****CALCIUM HYDROXIDE.**

*B.P.* *Syn.*—SLAKED LIME.



A white, odourless powder, having a caustic taste.

The Pharmacopœia directs that 'it should be recently prepared,' but this is unnecessary if air be excluded.

**Solubility.**—Sparingly soluble in Water (1 in 900); the solution, on exposure to the air, soon acquires a film of Calcium Carbonate.

**Medicinal Properties.**—Antacid, astringent, sedative. The Solution (Lime Water) is useful in acid and gouty dyspepsia; in vomiting and diarrhoea of children, especially if given with the milk, as it renders the curd less dense; in enteric fever it lessens the chances of haemorrhage; also in the form of diluted saccharated solution to relieve chronic vomiting, and vomiting of pregnancy. The Liniment of Lime is applied to burns and scalds. When made with Linseed Oil it is known as Carron Oil.

**Incompatibles.**—Vegetable and mineral Acids, alkaline and metallic salts, Tartar Emetic.

**Official Preparations.**—Liquor Calcis and Liquor Calcis Saccharatus. Used in the preparation of Calcii Hypophosphis, Chloroformum, Extractum Ipecacuanhae Liquidum. Lime Water is used in the preparation of Argenti Oxidum, Linimentum Calcis, Lotio Hydrargyri Flava and Lotio Hydrargyri Nigra.

**Not Official.**—Liniment for freckles, Carron Oil.

Official in Fr., Chaux Éteinte.

#### LINIMENTUM CALCIS. LINIMENT OF LIME.

Solution of Lime, 1; Olive Oil, 1. (1 in 2)

Official in Belg., Solution of Lime and Almond Oil, equal parts; Fr. (Linim. Calcaire), Solution of Lime and Almond Oil, equal parts; Ital., Lime Water and Olive Oil, equal parts; Jap. and Mex., Lime Water 1, Sesame Oil 1; Port., Lime Water 9, Oil of Almonds 1; Span., Lime Water 2, Oil of Almonds 1; Dutch Supp., Russ., Swed., Swiss and U.S., Solution of Lime and Linseed Oil, equal parts. All by weight, except U.S.

#### LIQUOR CALCIS. SOLUTION OF LIME. B.P. Syn.—LIME WATER.

A saturated Solution of Calcium Hydroxide (washed free of Chlorides) in Distilled Water. It should contain about  $\frac{1}{2}$  grain in the fl. oz.

**Dose.**—1 to 4 fl. oz. = 28·4 to 113·6 c.c.

It is more palatable when given in Milk.

Lime Water is best kept in full bottles and well closed from the air.

So-called aerated 'Lime Water' is sold in syphons, but we understand that it is aerated with Carbonic Acid Gas, and in that case the name is misleading.

Official in Austr., Belg. and Hung., Aqua Calcis; Dan., Dutch, Norw. and Swed., Solutio Hydratis Calcici; Fr., Eau de Chaux; Ger. and Jap., Aqua Calcariae; Ital., Acqua di Calce; Mex. and Port., Agua de Cal; Russ., Calcaria Caustica Soluta; Span., Solucion de Cal; Swiss, Calcium Hydricum Solutum; U.S., Liquor Calcis.

Water becomes saturated with much less Lime than ordered in

any of the Pharmacopœias, therefore Liquor Calcis is of the same strength in all.

**LIQUOR CALCIS SACCHARATUS.** SACCHARATED SOLUTION OF LIME.

Calcium Hydroxide, 1; Refined Sugar in powder, 2; Distilled Water, 20. (about 1 in 55)

Contains about 8 grains of CaO in 1 fl.oz.

1 oz. = about 14 fl.oz. Lime Water.

As suggested in our former editions the Sugar should be first dissolved in the Water, and the Calcium Hydroxide added to the Solution; after a few hours' occasional agitation, decant.

**Dose.**—20 to 60 minims = 1·2 to 3·6 c.c.

**Official in Hung., Aqua Calcis Saccharata.**

**Not Official.**

**LINIMENT FOR FRECKLES.**—Liniment of Lime, 8; Solution of Ammonia, 1; mix.

**CARRON OIL.**—Equal parts of Linseed Oil and Lime Water, shaken to form a cream.

One of the best **applications** to burns or scalds, more particularly when 1 or 2 p.c. of Phenol has been added to it.

**Not Official.**

**CALCII GLYCEROPHOSPHAS.**

**CALCIUM GLYCEROPHOSPHATE.**

A white, crystalline powder, prepared by the action of Milk of Lime on Glycerophosphoric Acid, and purified by treatment with Alcohol.

**Solubility.**—1 in 22 of Water, less soluble in warm Water, and almost insoluble in boiling Water; insoluble in Alcohol (90 p.c.).

**Medicinal Properties.**—It increases the general nutrition of the body in certain forms of neurasthenia.

**Dose.**—5 to 15 grains = 0·32 to 1 gramme dissolved in Water

**Official in Mex., Glicerofosfato de Calcio.**

**SYRUPUS GLYCEROPHOSPHATUM.**—The following is the formula given by Dr. Robin, who introduced the preparation: Calcium Glycerophosphate, 6 grammes; Sodium, Potassium, and Magnesium, Glycerophosphates, of each 2 grammes; Iron Glycerophosphate, 1 gramme; Tinctura Ignatia Amara, 30 minims; Pepsin, 3 grammes; Maltine, 1 gramme; Tincture of Kola, 10 grammes; Syrup of Cherries to 200 grammes.—P.J. '95, i. 1191.

Nearly all commercial Syrups of the Glycerophosphates

become turbid and throw down a bulky deposit on standing, and the same objection applies to the following.

**SYRUPUS GLYCEROPHOSPHATUM COMPOSITUS** (*B.P.C.*).—Cudbear,  $\frac{1}{4}$  oz.; Distilled Water, 10 fl. oz.; boil for ten minutes, filter and in the warm filtrate dissolve:—Calcium Glycerophosphate, 160 grains; Potassium Glycerophosphate, 80 grains; Sodium Glycerophosphate, 80 grains; Magnesium Glycerophosphate, 80 grains; Iron Glycerophosphate (in scales), 40 grains; Citric Acid, 30 grains; Caffeine Citrate, 80 grains; Strychnine Hydrochloride, 2 grains. Add Refined Sugar, 14 oz., heat until dissolved, and strain. When cold, add previously mixed Chloroform, 20 minimis; Alcohol (90 p.c.), 40 minimis, and Distilled Water, *q.s.* to yield 20 fl. oz.

**Dose.**—1 to 2 fl. dram. = 3·6 to 7·1 c.c.

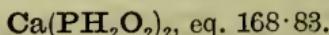
**FERRI GLYCEROPHOSPHATIS** (Iron Glycerophosphate).—Yellow, or yellowish-green scales, or as a white powder, soluble in cold water, more readily in hot. Introduced as a nervine tonic. Has been recommended in anaemia and especially chlorosis.

**Dose.**—5 to 10 grains = 0·32 to 0·65 grammes.

**Acidum Glycerophosphoricum.**—A clear, colourless or pale yellowish, syrupy liquid. Sp. gr. 1·127. Chiefly used for the preparation of the salts, but rarely used medicinally.

## CALCII HYPOPHOSPHIS.

### CALCIUM HYPOPHOSPHITE.



A white, odourless, crystalline salt, having a nauseous bitter taste.

**Solubility.**—1 in 8 of Water, and scarcely more soluble in boiling Water. Insoluble in Alcohol (90 p.c.).

**Medicinal Properties.**—Similar to those of Phosphorus, but without its unpleasant effects. Given in cases of nervous and general debility; it is by some supposed to be useful in phthisis.

**Dose.**—3 to 10 grains = 0·2 to 0·65 grammes.

**Prescribing Notes.**—Usually given in mixtures or in one of the various forms of Syrup.

**Not Official.**—Glycerola Hypophosphitum, Syrupus Calcii Hypophosphitis (*Squire*) and Syrupus Calcii Hypophosphitis (*B.P.C.*).

**Official in Belg., Dutch, Fr., Ital., Jap., Mex., Norw., Port., Span., Swiss and U.S.**

**Not Official.**

**GLYCEROLA HYPOPHOSPHITUM.**—Calcium, Potassium, and Sodium Hypophosphites, of each 1; dissolve these in Water, 40;

filter and add Sugar, 40; Orange-flower Water, 2; Cherry-laurel Water, 2; dissolve and add Glycerin, 12, and filter.

**Dose.**—1 to 2 fl. dram. = 3·6 to 7·1 c.c.

(U.S. Syrupus Hypophosphitum, containing these three Hypophosphites.)

**SYRUPUS CALCII HYPOPHOSPHITIS (Squire).**—Calcium Hypophosphate, 4; Water, 38; Sugar, 59.

**Dose.**—1 fl. dram. = 3·6 c.c. containing 3 grains = 0·2 grammie.

The following B.P.C. Syrup is only one-third the strength, necessitating an excessive quantity of Syrup for a full dose of the salt:

**SYRUPUS CALCII HYPOPHOSPHITIS (B.P.C.).**—Contains in each fl. oz. of Syrup, 8 grains of Calcium Hypophosphate, and 1 minim of Hypophosphorous Acid.

**Dose.**—1 to 4 fl. dram. = 3·6 to 14·2 c.c.

**SYRUPUS CALCII ET SODII HYPOPHOSPHITUM (U.S.N.F.).**—Calcium Hypophosphate, 35; Sodium Hypophosphate, 35; Citric Acid, 1·5; Sugar, 775; Water, sufficient to make 1000.

1 fl. dram. contains 2 grains each of Calcium Hypophosphate and Sodium Hypophosphate.

### Not Official.

#### CALCII IODAS.

##### CALCIUM IODATE.

A white, or more usually yellowish, very deliquescent, crystalline powder, antiseptic and disinfectant. Under the name **Calcinol** it has been used as an antiseptic dressing in place of Iodoform.—*L.* '00, ii. 1867; *P.J.* '01, i. 27.

**Dose.**—1 to 3 grains = 0·06 to 0·2 grammie, two or three times daily in water.

#### CALCII PHOSPHAS.

##### CALCIUM PHOSPHATE.

A light, white, amorphous powder.

**Solubility.**—Insoluble in Water; soluble in Diluted Hydrochloric Acid or Diluted Nitric Acid.

**Medicinal Properties.**—For rickets and mollities ossium, and other conditions of malnutrition; said to be useful in scrofulous affections, to promote union of bone fractures, in tardy teething, and in anaemia; given to counteract the draining of phosphates during pregnancy and lactation, and to prevent decay of the teeth and toothache during pregnancy.

**Dose.**—5 to 15 grains = 0·32 to 1 grammie.

**Prescribing Notes.**—More commonly ordered in smaller doses. Given as a powder, or in the form of Syrup. Squire's Chemical Food is an elegant and useful form.

**Official Preparation.**—Contained in Extractum Euonymi Siccum and Pulvis Antimonialis.

**Official** in all the Foreign Pharmacopœias except Norw.

**Not Official.**

**CALCII SULPHAS.**

**CALCIUM SULPHATE.**

SULPHATE OF LIME. CALCINED GYPSUM. PLASTER OF PARIS.

Native Calcium Sulphate ( $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$ , eq. 170·81) rendered nearly anhydrous by heat.

**Official** in Austr., Dan., Ger., Hung., Norw., Russ., Swed., Swiss and U.S.

The native salt is used for the preparation of Calx Sulphurata.

**CALX SULPHURATA** (Calcii Sulphidum). See p. 160.

**Not Official.**

**CALENDULA.**

**COMMON MARIGOLD.**

The Florets of *Calendula officinalis*.

**Official** in Span., Flowers; U.S., Flowering Herb.

**TINCTURA CAELENDULÆ FLORUM.**—1 of Marigold Flowers, dried. in No. 20 powder, percolated with Alcohol (60 p.c.), to yield 5.

This is included in the B.P.C. formulary.

**Medicinal Properties.**—Used as an application for sprains and bruises.

**Dose.**—5 to 20 minims = 0·3 to 1·2 c.c.

**Official** in U.S., 1 in 5 (Alcohol 94 p.c.).

**Not Official.**

**CALOTROPIS.**

*Syn.*—MUDAR.

The dried root-bark of *Calotropis procera*, and of *Calotropis gigantea*, freed from the outer corky layer; dose 3 to 10 grains = 0·2 to 0·65 gramme, as a tonic; as an emetic, 30 to 60 grains =

2 to 4 grammes; and *Tinctura Calotropis* (1 in 10), dose 30 to 60 minims = 1·8 to 3·6 c.c.; are Official in *Ind.* and *Col. Add.* for India and the Eastern Colonies.

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## CALUMBÆ RADIX.

### CALUMBA ROOT.

The Root of *Jateorhiza Columba*, cut in nearly circular transverse discs and dried.

The dried stem of *Coscinium fenestratum* (false Calumba Root) is Official in *Ind.* and *Col. Add.* for India and the Eastern Colonies.

**Medicinal Properties.**—A bitter stomachic and tonic, useful in atonic dyspepsia, in promoting appetite and removing flatulence. Given in convalescence from acute diseases, combined with alkalis or Bismuth.

**Prescribing Notes.**—*Given in the form of Infusion, Liquor Concentratus, or Tincture with other medicines. It is one of the few bitters that can be given with salts of Iron.*

**Official Preparations.**—Infusum Calumbæ, Liquor Calumbæ Concentratus, and Tinctura Calumbæ.

**Not Official.**—Extractum Calumbæ.

**Official in all the Foreign Pharmacopœias.**

### INFUSUM CALUMBÆ. INFUSION OF CALUMBA.

Calumba Root, 1; Distilled Water, cold, 20; infuse for half an hour; strain. (1 in 20)

Cold Water is used to avoid solution of the Starch which exists in the root.

**Dose.**—½ to 1 fl. oz. = 14·2 to 28·4 c.c.

A corresponding preparation, *Infusum Coscinii*, is Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

**Official in Ital.**, 1 in 20; **Span.**, 1 in 100.

### LIQUOR CALUMBÆ CONCENTRATUS. CONCENTRATED SOLUTION OF CALUMBA.

An aqueous preparation of Calumba (preserved by the addition of Alcohol). 1 of Calumba in 2 of Liquor.

**Dose.**—½ to 1 fl. dram. = 1·8 to 3·6 c.c.

A corresponding preparation, *Liquor Coscinii Concentratus*, is Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

### TINCTURA CALUMBÆ. TINCTURE OF CALUMBA.

1 of Calumba Root in No. 20 powder, macerated with 10 of Alcohol (60 p.c.). (1 in 10)

**Dose.**—½ to 1 fl. dram. = 1·8 to 3·6 c.c.

A corresponding preparation, **Tinctura Coscinii**, is Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

**Official in** Belg., Dutch Supp., Fr., Mex., Port., Span., Swed. and Swiss, 1 in 5; all by weight. Ital. and U.S., 1 in 10.

### Not Official.

**EXTRACTUM CALUMBÆ.**—Calumba Root exhausted with Alcohol (60 p.c.) and the product evaporated to a pill consistence. 16 parts of Root yield 1 to 1½ parts of Extract.

**Dose.**—½ to 2 grains = 0·03 to 0·13 grammes.

**Official in** Austr. and Hung., made with Alcohol (70 p.c.); Belg., Fr., Ital., Mex. and Span., with Alcohol (60 p.c.); Dutch, with Alcohol (90 p.c.); Jap., with Alcohol (45 p.c.); Port., with Alcohol (65 p.c.); U.S., **Fluid Extract** (1 in 1) only, with Dilute Alcohol.

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## CALX.

### LIME.

Calcium Oxide, **CaO**, eq. 55·59, obtained by calcining Chalk, Limestone, or Marble.

**Solubility.**—Decomposed by Water, forming Calcium Hydrate, under which heading the solubility is given.

**Official in** all the Foreign Pharmacopœias.

**CALCII HYDRAS.**—*See* p. 151.

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## CALX CHLORINATA.

### CHLORINATED LIME.

A white, or greenish-white, dry, amorphous powder, evolving a strong chlorinaceous odour. Is a mixture of variable composition, consisting chiefly of Calcium Hypochlorite. Should contain, according to the Official requirements, 33 p.c. of available Chlorine.

As it becomes moist and gradually decomposes on exposure to the air, it should be preserved in well-closed vessels in a cool and dry place.

**Solubility.**—Partially soluble in Water and in Alcohol (90 p.c.). Decomposed by acids with formation of Hypochlorous Acid, which in the case of Hydrochloric Acid reacts with it to form Chlorine.

**Medicinal Properties.**—Chiefly used as a disinfectant. A solution of 1 of Calx Chlorinata to 120 of Water is very

powerfully antiseptic and is neither toxic nor caustic. Acts best at a temperature of 110° to 120° F.

A remarkably efficacious and absolutely harmless antiseptic. Useful as an external application in surgical, ophthalmic and gynaecological practice and also as an injection in affections of the rectum and bladder. See also below, *Liquor Calcis Chlorinatæ*.

Bleaching powder frequently consists of little else than inert Calcium Chloride and Carbonate, the active Chlorine being spent. Generally speaking, it only destroyed the least resistant microbes, though in the case of anthrax spores on linen this substance proved more effective than Carbolic Acid.—*London County Council's Report on Disinfectants*, L. '02, i. 759.

**Official Preparations.**—*Liquor Calcis Chlorinatæ*. Used in the preparation of Chloroform and *Liquor Sodæ Chlorinatæ*.

**Not Official.**—*Liquor Potassæ Chlorinatæ*.

**Official in Austr., Dan., Dutch Supp., Hung., Jap. and Norw.,** containing 20 p.c. of available Chlorine; Ger., Russ., Swed. and Swiss, 25 p.c.; Ital., 28·6 p.c.; Belg., 31·77 p.c.; Fr. and Span., 32 p.c.; U.S. 35 p.c.; Port., not indicated.

### **LIQUOR CALCIS CHLORINATÆ. SOLUTION OF CHLORINATED LIME.**

Chlorinated Lime, 1; Distilled Water, 10. (1 in 10)

The Solution should yield, when fresh, about 3 p.c. of available Chlorine. *B.P.* requires not less than 2½ p.c.

**Medicinal Properties.**—A powerful disinfecting and bleaching agent. Diluted 1 to 12 or 16 of Distilled Water, it is used as an antiseptic lotion to unhealthy ulcers, purulent ophthalmia, fetid cutaneous affections and scabies; as an injection in foul nasal, aural and vaginal discharges; as a gargle in septic tonsillitis and diphtheria.

**Antidotes.**—Emetics, White of Egg, Milk, Flour; *not* Acids.

**Official in Belg., 2·2 in 100; Fr., 1 in 45; Russ., 2·5 p.c. of Chlorine; Span., 1 in 40.**

### **LIQUOR SODÆ CHLORINATÆ. SOLUTION OF CHLORINATED SODA.**

A liquor containing about 3 p.c. of available Chlorine prepared by the interaction of Bleaching Powder and Sodium Carbonate. It is more stable than the Solution of Chlorinated Lime.

**Medicinal Properties.**—Antiseptic. Used internally in typhoid fever and in dysentery. Invaluable as a gargle in throat affections attended with fœtor, as in scarlet fever, diphtheria and septic tonsillitis, 1 fl. oz. in 12 to 16 fl. oz. of Water. Diluted with Water or Glycerin it forms an excellent

application to sore nipples. It is also a powerful disinfecting agent, and is employed as a wash for foul ulcers.

Recommended in typhoid fever.—*L.* '85, ii. 520; for fuller information on the treatment of typhoid and diphtheria by Chlorine see under 'Chlori Liquor.'

A paper by Klein on the disinfecting action of solutions of Sodium Hypochlorite.—*L.* '96, ii. 1509.

**Dose.**—10 to 20 minims = 0·6 to 1·2 c.c.

Official in Belg., Dutch Supp., Fr., Mex., Port., Span., Swed., Swiss and U.S. in various proportions.

#### Not Official.

**LIQUOR POTASSÆ CHLORINATÆ** (Eau de Javelle).—Prepared by the interaction of Bleaching Powder and Potassium Carbonate. Contains about 3 p.c. available Chlorine.

## CALX SULPHURATA.

SULPHURATED LIME.

*Syn.*—CALTII SULPHIDUM.

A white, or greenish-white, amorphous powder, possessing an odour of Sulphuretted Hydrogen. Should contain at least half its weight of Calcium Sulphide.

**Medicinal Properties.**—Antisuppurative; useful for boils, pustules and small abscesses; also used as a depilatory. As an application in the form of Piginmentum or Lotio Calcii Sulphurati for the cure of scabies.

Daily doses of 1 grain as a prophylactic of influenza.—*B.M.J.* '95, i. 975.

**Dose.**— $\frac{1}{4}$  to 1 grain = 0·016 to 0·065 grammes.

**Prescribing Notes.**—Best prescribed in pill, made with Glucose. If the total weight of each pill be less than  $\frac{1}{2}$  grain it is made up to this weight with Milk Sugar. The pills are coated with Sandarach solution, and usually sent out in bottles.

Official in Austr., Belg., Dutch, Mex. and U.S.

#### Not Official.

**PIGMENTUM CALCIS SULPHURATÆ.** *Syn.*—VLEMINCKX'S SOLUTION.—Calcium Hydroxide, 60 grains; Sublimed Sulphur, 90 grains; Distilled Water, 1 oz. and 5 drm. Heat the Sulphur and Lime (previously well mixed) in the Water, stirring diligently with a slip of wood; boil until the mixture measures only 1 oz., then filter. *Caution.*—This mixture needs to be used with some discretion, and on occasion should be diluted.—*British Skin.*

A similar preparation is contained in London, University, and

Westminster Hospital Pharmacopœias under the name **Lotio Calcii Sulphurati**.

A Solutio Sulfureti Calcici (Vleminckx) is Official in Austr., and Dutch Supp.

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## CAMBOGIA.

### GAMBOGE.

A Gum Resin, obtained from *Garcinia Hanburii*.

It is imported from Siam, and consists of about 75 p.c. of Resin and 15 to 20 of Gum, the Resin being the active ingredient.

**Indian Gamboge**, obtained from *Garcinia Morella*, is Official in the *Ind. and Col. Add.* for India and the Eastern Colonies.

**Solubility.**—About three-fourths is soluble in Alcohol (90 p.c.), the solution is rendered an opaque yellow by Water; three-fourths is also soluble in Ether. A solution in Ammoniated Alcohol is not rendered turbid by the addition of Water.

**Medicinal Properties.**—A powerful hydragogue cathartic; in small doses, diuretic. It is employed in the treatment of dropsy, attended with obstinate constipation; and in cerebral congestion. As it is apt to occasion much sickness and griping, it is best given in small doses, repeated at short intervals, until it operates; but it should never be given to children or very old persons, or in inflamed conditions of the abdominal or pelvic organs.

**Dose.**— $\frac{1}{2}$  to 2 grains = 0·032 to 0·13 grammes.

*Ph. Ger.* maximum single dose, 0·3 gramme; maximum daily dose, 1·0 gramme.

**Prescribing Notes.**—*It may be given in pill or emulsion, or dissolved in an alkaline solution; the last method has been recommended in dropsical complaints.*

**Official Preparation.**—Pilula Cambogiae Composita.

**Official in** Belg., Gummi Guttæ; Fr., Gomme Gutte; Ger. and Swiss, Gutti; Ital., Gomma Gotta; Mex., Goma Guta; Port., Gomma-Guta; Span., Gutagamba; Swed., Gummi-Resina Gutta; U.S., Cambogia.

### PILULA CAMBOGIÆ COMPOSITA. COMPOUND PILL OF GAMBOGE.

Gamboge, 1; Barbados Aloes, 1; Compound Powder of Cinnamon, 1; Hard Soap, 2; massed with Glucose Syrup.

(about 1 in 6)

**Dose.**—4 to 8 grains = 0·26 to 0·52 grammes.

**Official in** Fr. and Belg. (Pilule Anderson), Aloes, Gamboge,

Oil of Anise, and Honey; Port. (Pilulas de Aloes e Gomma Guta), the same with Soap; Fr. has also Pilules de Bontius, containing Ammoniacum and Vinegar instead of Cinnamon and Soap; U.S. (Pil. Catharticae Comp.), contains Gamboge about 1 in 12.

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## CAMPHORA.

### CAMPHOR.

A crystalline transparent solid, or a white crystalline powder. It is obtained in the raw state from *Cinnamomum Camphora*, in Formosa and Japan, and resublimed in this country and elsewhere.

**Solubility.**—1 in 700 of Water; 1 in 1½ of Alcohol (90 p.e.); or by weight, 1 in 1; 4 in 1 of Chloroform; 12 in 7 of Ether; 1 in 4 of Olive Oil (slowly); 1 in 1½ of Oil of Turpentine; 2 in 1 of Glacial Acetic Acid; insoluble in Alkalies.

3 of Camphor rubbed with 1 of Carbolic Acid crystals form a clear solution. 3 of Camphor and 3 of Hydrate of Chloral rubbed together liquefy. Camphor also forms a liquid when mixed with many other substances, Menthol, Thymol, Naphthol, Salol, Butyl Chloral, and Salicylic Acid.

**Medicinal Properties.**—A stimulant sedative; anti-spasmodic, carminative, expectorant, diaphoretic and antiphrodisiac. A feeble antiseptic.

Stimulant in the prostration of febrile diseases; sedative in mania, delirium tremens and chordee, also useful in dysmenorrhœa, spasmodic asthma and chronic bronchitis; in hysteria, nymphomania and spermatorrhœa. Spirit of Camphor mixed with warm Water to bathe the nostrils is highly useful in hay fever, and relieves irritation of the nostrils in common cold; also used as an **inhalation**. The **Compound Tincture** is given with Tincture of Squill to allay spasmodic cough in bronchitis and phthisis. In large doses Camphor tends to cause cardiac depression, convulsions, and possibly collapse.

Externally, it is used as a counter-irritant to relieve pain in chronic rheumatism, neuralgia, and as an application to chilblains; also in chronic eczema and other painful skin diseases.

In the treatment of tuberculosis 0·1 to 0·2 c.c. of Camphorated Oil P.G. (1 to 9 of Olive Oil) subcutaneously injected, stated to be useful in checking purulent discharge and formation of sputum.—*P.J.* '99, i. 583.

10 grammes of 10 p.e. solution of Camphor in Olive Oil hypo-

dermically injected for collapse.—*B.M.J.E.* '95, ii. 63; *P.J.* '95, ii. 380.

**Dose.**—2 to 5 grains = 0·13 to 0·32 grammes.

**Prescribing Notes.**—*An excellent pill can be made by mixing Camphor, 36 grains; Curd Soap, 4 grains; 'Diluted Glucose,' 10 grains; and dividing into 12 or more pills as required. Its unpleasant taste is covered well by Milk, which is a good solvent for Camphor. The Spirit is given on Sugar, also in Milk. Camphor can be powdered quite readily with the addition of a small quantity of Alcohol (90 p.c.).*

Symptoms of poisoning by Camphor: convulsions, lividity of countenance, stupor, arrest of urinary secretion.

**Official Preparations.**—*Aqua Camphoræ, Linimentum Camphoræ, Linimentum Camphoræ Ammoniatum, Spiritus Camphoræ and Tinctura Camphoræ Composita. Contained in Linimentum Aconiti, Linimentum Belladonnae, Linimentum Opii, Linimentum Saponis, Linimentum Sinapis, Linimentum Terebinthinæ and Unguentum Hydrargyri Compositum. Of Linimentum Camphoræ: Linimentum Chloroformi, Linimentum Hydrargyri, Linimentum Terebinthinæ Aceticum.*

**Not Official.**—Camphor Balls, Camphora cum Creta, Ceratum Camphoræ, Essentia Camphoræ, Spiritus Camphoræ Fortior, Vinum Camphoratum, Essential Oil of Camphor, Eau Sedative, Camphor Salicylate, Oxycamphor, Phenol Camphor, Thymol Camphor, Resorcin Camphor, and Camphoric Acid.

**Antidotes.**—Stomach-tube or emetics, stimulants freely, and warmth to the extremities.

Official in all the Foreign Pharmacopœias.

#### AQUA CAMPHORÆ. CAMPHOR WATER.

Dissolve 70 grains of Camphor in Alcohol (90 p.c.), *q.s.* to form  $\frac{1}{2}$  fl.oz.; add this gradually to 160 oz. of Distilled Water, with agitation to form a solution.

The Camphor is now dissolved in Alcohol (90 p.c.), which saves time and ensures a more uniform product.

**Dose.**—1 to 2 oz. = 28·4 to 56·8 c.c. =  $\frac{7}{16}$  to  $\frac{7}{8}$  grain of Camphor.

**Official in Dutch Supp.,** Camphor 1, Alcohol 2, Water 197; Norw. (*Emulsio Camphoræ*), Camphor, Mucilage of Acacia, and Water; Fr., Eau Camphrée; Port., same as Brit.; U.S. Camphor triturated with Alcohol, Precipitated Calcium Phosphate, and Distilled Water.

**LINIMENTUM CAMPHORÆ. LINIMENT OF CAMPHOR.**  
**B.P.Syn.—CAMPHORATED OIL.**

Camphor, 1; Olive Oil, 4. (about 1 in 5)

**Official in Austr. (*Oleum Camphoratum*), 1 and 3;** Dan., Norw. and Swed., 1 and 4; Belg., Dutch Supp. (*Solutio Camphorea*)

Oleosa), Fr., Ger., Ital., Russ. and Swiss, 1 and 9; Span. (Aceite Alcanforado), 1 and 8: all with Olive Oil. Port., 1 and Almond Oil 9. Mex. (Aceite Alcanforada), 1 and 9; Hung., 1 and 2: both with Sesame Oil. U.S., 1 and Cotton-seed Oil 4. All by weight. Ger. also includes Oleum Camphoratum Forte, 1 and 4.

### **LINIMENTUM CAMPHORÆ AMMONIATUM.**

AMMONIATED LINIMENT OF CAMPHOR. *B.P.Syn.*—COMPOUND LINIMENT OF CAMPHOR. *N.O.Syn.*—LINIMENTUM AMMONIATUM CAMPHORATUM.

Camphor, 5; Oil of Lavender,  $\frac{1}{4}$ ; Strong Solution of Ammonia, 10; Alcohol (90 p.c.), *q.s.* to make 40. (1 in 8)

Stimulating. Most useful in tic-douloureux and chronic rheumatism. Painful neuralgia has been relieved by applying lint previously soaked in the liniment, covering with a dry napkin until redness is produced, then lightly rubbing the part with Laudanum or Liquor Meconicus.

Official in Belg., Dan., Dutch Supp., Fr., Ger., Ital., Mex., Norw., Port., Russ., Swed. and Swiss, in various proportions.

### **SPIRITUS CAMPHORÆ. SPIRIT OF CAMPHOR. *N.O.Syn.*** —TINCTURA CAMPHORÆ.

Camphor, 1; Alcohol (90 p.c.), *q.s.* to make 10. (1 in 10)

Dose.—5 to 20 minims = 0·3 to 1·2 c.c.

Official in Austr., Belg., Dan., Dutch, Fr. (Teinture de Camphre Conc.), Ger., Ital., Jap., Norw., Port., Swed., Swiss and U.S., 1 in 10; Hung., about 1 in 7; Russ., 1 in 13; Mex. (Alcohol Alcanforada), 1 and 19; Span., 1 and 23. All by weight except U.S.

### **TINCTURA CAMPHORÆ COMPOSITA. COMPOUND TINCTURE OF CAMPHOR. *B.P.Syn.*—PAREGORIC. PAREGORIC ELIXIR.**

Tincture of Opium, 585 minims; Benzoic Acid, 40 grains; Camphor, 30 grains; Oil of Anise,  $\frac{1}{2}$  fl. dram.; Alcohol (60 p.c.), *q.s.* to make 20 fl. oz.

The 40 grains of Opium has been replaced by the corresponding quantity of Tincture of Opium, 585 minims, as previously suggested in the *Companion*.

Dose.—30 to 60 minims = 1·8 to 3·6 c.c. =  $\frac{1}{8}$  to  $\frac{1}{4}$  grain Opium.

30 minims contain about  $\frac{1}{80}$  grain of Anhydrous Morphine = about  $\frac{1}{80}$  grain of Morphine Hydrochloride.

Official Tincture of Opium may vary between 0·7 and 0·8 p.c. cf Anhydrous Morphine.

The Pimpinella Oil is preferable as being more soluble in Alcohol (60 p.c.).

*Fr.* **Elixir Parégorique**.—Extract of Opium, 3; Benzoic Acid, 3; Camphor, 2; Oil of Anise, 3; Alcohol (60 p.c.), 650.

*Ger. and Russ.* **Tinctura Opii Benzoica**.—Opium, 1; Benzoic Acid, 4; Camphor, 2; Oil of Anise, 1; Diluted Alcohol, 192.

*U.S.* **Tinctura Opii Camphorata**.—Opium, 4; Benzoic Acid, 4; Camphor, 4; Oil of Anise, 4; Glycerin, 40; Diluted Alcohol, to 1000.

All by weight, except U.S.

### Not Official.

**CAMPHOR BALL**.—Camphor, 2; White Beeswax, 5; Spermaceti, 3; Oil of Almonds, 3; Tincture of Tolu,  $\frac{1}{4}$ : melt and pour into half-ounce gallipots.

**CAMPHORA CUM CRETA**.—Camphor, 1; Prepared Chalk, 8: powder the Camphor by rubbing it with a few drops of Alcohol (90 p.c.), mix in the Chalk, and pass the whole through a sieve. A dentifrice.

**CERATUM CAMPHORÆ**.—Camphor, 2; White Beeswax, 3; Lard, 4; Oil of Almonds, 3: melt together and stir till cold.

**ESSENTIA CAMPHORÆ**.—Camphor, 1; Alcohol (90 p.c.), 20. Given for coryza, 5 minims every hour in Water or on Sugar.

**SPIRITUS CAMPHORÆ FORTIOR** (Rubini's Essence).—A saturated solution, in Alcohol (90 p.c.), contains 1 in  $2\frac{1}{4}$ .

**VINUM CAMPHORATUM** (*Ger.*).—Camphor, 1; Alcohol (90 p.c.), 1; Mucilage of Acacia, 3; White Wine, 45. All by weight.

**ESSENTIAL OIL OF CAMPHOR**.—An oily liquid, varying in colour from pale to dark yellow. Sp. gr., different samples examined by us have varied from 0·840 to 0·980. Optical Rotation dextrogyre. It has been used as an application in rheumatism.

**EAU SEDATIVE** (Lotion Ammoniacale Camphrée *Fr.*).—Spirit of Camphor, 10; Liquor Ammon., 60; Sodium Chloride, 60; Distilled Water, 1000.

**CAMPHOR SALICYLATE** (Camphossil).—A crystalline, unctuous, deliquescent mass. Condensation product of Camphor and Salicylic Acid. Introduced as an antiseptic and antipyretic.

**Dose.**— $7\frac{1}{2}$  grains = 0·5 grammes.

**OXYCAMPHOR**.—A white crystalline Powder, soluble about 1 in 50 Water. Has been found useful in cases of dyspncea, especially of pulmonary origin. Best given in cachets or gelatin capsules. It is easily altered by exposure to air.—*P.J.* '02, ii. 132.

**Dose.**—15 to 30 grains = 1 to 2 grammes.

Under the name of **Oxaphor**, a 50 p.c. solution of the above in Alcohol (90 p.c.) has been introduced for the treatment of respiratory troubles.—*P.J.* '99, ii. 135. **Camphoroxol** is stated to be a 1 p.c. alcoholic solution of Camphor containing 3 p.e. Hydrogen Dioxide.

**PHENOL-CAMPHOR, THYMOL-CAMPHOR, and RESORCIN-CAMPHOR** are oily fluids obtained by heating Camphor with equal parts of Phenol, Thymol, and Resorcin respectively.—*P.J.* (3) '96, i. 325.

**CAMPHORIC ACID.**—Colourless, crystalline leaflets, or a white, crystalline powder, with a faint camphoraceous odour. Soluble 1 in 160 of cold Water; 1 in 8 of boiling Water; 1 in 1·5 of Alcohol (90 p.c.); readily in Ether.

**Dose.**—15 to 30 grains = 1 to 2 grammes, conveniently given in *cachets*.

Is a valuable remedy in cases of urinary calculi and of vesical catarrh. A 1 p.c. solution has been recommended in acute and chronic affections of the respiratory passages.—*P.J.* (3) xix. 507.

In 4 p.c. alcoholic solutions as spray or linctus, in laryngeal phthisis.

In cystitis, 15 grains three times a day.—*Y.B.P.* '02, 167.

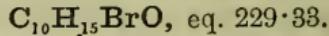
One gramme 3 or 4 times a day, or 2 grammes in the evening, checks the night sweating in phthisis.—*L.M.R.* '88, 276.

Official in Dutch Supp. and Ger.

### Not Official.

#### CAMPHORA MONOBROMATA.

##### MONOBROMATED CAMPHOR.



Colourless, prismatic needles, or scales, with a camphoraceous odour and taste.

**Solubility.**—Almost insoluble in Water; soluble 1 in 12 of Alcohol (90 p.c.); 10 in 7 of Chloroform; 1 in 2 of Ether; 1 in 8 of Olive Oil; sparingly in Glycerin.

**Medicinal Properties.**—Hypnotic and sedative. Given in hysteria, epilepsy, chorea, spermatorrhœa, and delirium tremens; but its use requires caution. It has been stated to be an antidote to Strychnine.

**Dose.**—2 to 5 grains = 0·13 to 0·32 gramme.

**Prescribing Notes.**—It can be prescribed in pills with 'Diluted Glucose,' or can be dissolved in Almond or Olive Oil and emulsified with Mucilage and Water. It is also given with Extract of Belladonna.

Larger doses than 5 grains are sometimes given in delirium tremens.

Official in Dutch, Fr., Ital., Jap., Mex., Port., Span., Swiss, and U.S.

#### CANNABIS INDICA.

##### INDIAN HEMP.

The dried flowering or fruiting tops of the female plant of

*Cannabis sativa*; from which, of course, the Resin has not been removed; grown in India.

O'Shaughnessy introduced Indian Hemp into this country, and Peter Squire made the extract for him.

The official variety may consist, according to the official monograph, of either the flowering or fruiting tops, and is frequently of very inferior quality, since the fruiting tops yield less Resin.

Preparations of *Cannabis Indica* show marked variation in physiological activity, owing to age, and perhaps other causes.

The important constituent is a Resin (Extract of Indian Hemp); the active principle is stated to be a red Oil, **Cannabinol**, which is liable to become oxidised and inert.—*J.C.S. Trans.* '96, 539; '99, 20.

**Medicinal Properties.**—Sedative, anodyne, hypnotic, and antispasmodic. Has been used with success in migraine and delirium, neuralgia, pain of last stages of phthisis, and in acute mania; also in menorrhagia and dysmenorrhœa. It is combined with Belladonna in whooping-cough, and in infantile convulsions, hepatic and renal colic; in tetanus and hydrophobia.

It does not produce constipation or loss of appetite; on the contrary, it restores the appetite which has been lost by chronic Opium and Chloral drinking.—*L.* '89, i. 625.

In chorea and pertussis.—*L.* '02, i. 1159.

**Prescribing Notes.**—Usually prescribed in the form of Extract or Tincture.

Dose of the Extract,  $\frac{1}{4}$  to 1 grain (with a sufficiency of Liquorice powder to form a pill); but as it varies considerably in strength it is better to commence with the smaller dose; toxic symptoms have been produced with 1 grain. Dose of the Tincture, 5 to 15 minims, which can be taken on Sugar, or diffused in Water, by the aid of 1 fl. dram. of Mucilage of Acacia to each fl. oz. of Water; the Mucilage should be diluted with twice its volume of Water before the addition of the Tincture.

Two interesting cases of toxic symptoms, caused in one case by taking the whole of the active ingredient of a mixture in the last dose, owing to omission of Mucilage for suspension. The other, a nervous patient, for whom the B.P. minimum dose was prescribed, and who took a dose from the bottle without measuring, and inadvertently took rather more than a double dose.—*L.* '03, i. 1042.

**Official Preparations.**—*Extractum Cannabis Indicæ*. Of the Extract, *Tinctura Cannabis Indicæ*. The Tincture is contained in *Tinctura Chloroformi et Morphinæ Composita*.

**Not Official.**—*Cannabinæ Tannas*, and *Cannabinon*.

**Antidotes.**—In case of over-dose, after employing stomach-tube, or emetics, hot brandy-and-water may be given, vegetable acids, such as lemon juice, vinegar, and the like. Strychnine

should be injected and a blister applied to the nape of the neck.

**Official** in Austr., Belg., Dutch Supp., Fr. (Chanvre), Hung., Ital. (Canape Indiana), Jap., Norw., Dan., Port. (Canhamo), Russ., Mex. and Span. (Canamo), Swed., Swiss and U.S.

**EXTRACTUM CANNABIS INDICÆ.** EXTRACT OF INDIAN HEMP.

Exhaust Indian Hemp, in coarse powder, with Alcohol (90 p.c.) by percolation ; evaporate to a soft extract.

**Dose.**— $\frac{1}{4}$  to 1 grain = 0·016 to 0·06 grammes.

**Official** in Austr., Belg., Dutch, Fr., Hung., Ital., Jap., Mex. (Extracto de Marihuana), Port., Russ., Swiss and U.S.

**TINCTURA CANNABIS INDICÆ.** TINCTURE OF INDIAN HEMP.

Dissolve 1 of Extract of Indian Hemp in 18 of Alcohol (90 p.c.) ; filter if necessary, and add Alcohol (90 p.c.), q.s. to yield 20. (1 in 20)

22 minims contain 1 grain of Extract.

**Dose.**—5 to 15 minims = 0·3 to 0·9 c.c.

**Official** in Belg. and Port., 1 Extract in 20 ; Dutch Supp., 1 Extract in 10. From Herb :—Fr., Hung., Ital., Jap., Mex. and Swiss, 1 in 5 ; Russ., 1 in 10 ; all by weight ; U.S., 15 in 100.

Not Official.

**CANNABINÆ TANNAS.**—An amorphous, yellowish powder, sparingly soluble in Water, Alcohol, and Ether. Soluble in acidulated Alcohol.

**Dose.**—4 to 8 grains = 0·26 to 0·52 grammes, mixed with Sugar and taken as a powder or in a *cachet*.

Was introduced as a hypnotic, but its effects are very uncertain.  
—T.G. '85, 329, 379.

It is occasionally prescribed for menorrhagia.

**Official** in Dutch Supp.

**CANNABINON.**—A soft resinous substance, generally found as a 10 p.c. trituration with Milk Sugar, also introduced as a hypnotic, but the dose ( $1\frac{1}{2}$  grains) was followed by excitement, collapse, and cramps.—T.G. '85, 286 ; L.M.R. '86, 434 ; contra-indicated in cardiac disease, L. '87, i. 542.

**CANTHARIS.**

CANTHARIDES.

The dried Beetle, *Cantharis vesicatoria*.

It is collected in Spain, France, Russia, Sicily, and Hungary. The powder should be dry and kept closely corked, for if at all

damp it is apt to acquire a putrid odour. A piece of Camphor kept in it prevents mites.

**Mylabris.**—The dried beetle *Mylabris phalerata*, is Official in the *Ind. and Col. Add.* for India and the African and Eastern Colonies; other species of *Mylabris* may be used provided they yield an equal amount of Cantharidin.

**Medicinal Properties.**—Externally its effects are rubefacient and irritant; by continued application it is vesicant. For the latter purpose the Emplastrum or Liquor Epispasticus is used, and is especially effective in inflammation of deep-seated parts, as in pleuritis, pericarditis, pneumonia, sciatica, neuralgia, and over the praecordial region in acute rheumatism; applied to rheumatic joints it removes pain and swelling; applied over the epigastrium it often checks obstinate vomiting and gastric pain. It acts for a longer period, and is less irritating to the patient, than Ammoniacal or Acetic Acid embrocations. Internally in small doses it is diuretic and aphrodisiac. It is given in gleet, in impotence, and incontinence of urine due to paralysis, but it should be given cautiously, for it irritates the kidneys and sometimes produces strangury, and it should never be given to aged people or to children, or in cases of nephritis.

The tincture in 5 minim doses three times daily in Water, arrests haemorrhage from the kidney.—*B.M.J.* '98, ii. 1551.

It is the basis of most of the applications used to increase the growth of hair.

In chronic inflammation of the bladder it should *not* be used as a counter-irritant, on account of its irritating effects on the urinary organs, when absorbed. In such cases a solution of Silver Nitrate ( $\frac{1}{2}$  drm. to 1 fl. oz. of Water) is to be preferred.

Thirty-two cases out of fifty-six of cystitis cured by teaspoonful doses of the following solution: Cantharidin, 1 milligramme, dissolved in 1 gramme of Alcohol, and diluted to 100 grammes with Water.—*B.M.J.E.* '95, ii. 6.

*Ph. Ger.* maximum single dose, 0.05 gramme; maximum daily dose, 0.15 gramme.

**Official Preparations.**—Acetum Cantharidis, Emplastrum Calefaciens, Emplastrum Cantharidis, Liquor Epispasticus, Tinctura Cantharidis, and Unguentum Cantharidis. Collodium Vesicans is prepared from Liquor Epispasticus.

**Not Official.**—Cantharidin, Potassium Cantharidate, Charta Epispastica, Emplastrum Vesicans, Linimentum Crinale, Liquor Cantharidis Concentratus, Unguentum Stimulans, and Boni's Blister.

**Antidotes.**—In case of poisoning by Cantharides use Emetics or Stomach tube, followed by Barley-water, gruel, white of egg; inject Morphine for pain.

Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.

**ACETUM CANTHARIDIS.** VINEGAR OF CANTHARIDES.

Cantharides, bruised, 2; Glacial Acetic Acid and Distilled Water, mixed in equal volumes, *q.s.* to yield 20; by percolation. (1 in 10)

A corresponding preparation, **Acetum Mylabridis**, is Official in the *Ind.* and *Col. Add.* for India and the African and Eastern Colonies.

Official in Port., about 1 in 6.

**COLLODIUM VESICANS.** BLISTERING COLLODION.

Blistering liquid, 20; Pyroxylin,  $\frac{1}{2}$ .

*See also CANTHARIDIN*, p. 171.

Official in Belg., Dan., Ger., Jap., Mex., Norw., Port., Russ., Swiss and U.S.

**EMPLASTRUM CALEFACIENS.** B.P. *Syn.*—WARMING PLASTER.

Infuse 1 of Cantharides, in coarse powder, in 5 of Boiling Distilled Water; strain and evaporate to  $1\frac{2}{3}$  on a Water-bath; add Yellow Beeswax, 1; Resin, 1; Resin Plaster, 13; Soap Plaster, 8. (about 1 in 25)

A corresponding preparation, **Emplastrum Calefaciens Mylabridis**, is Official in the *Ind.* and *Col. Add.* for India and the African and Eastern Colonies.

Official in U.S., Emplastrum Picis Cantharidatum, 1 in 40.

**EMPLASTRUM CANTHARIDIS.** CANTHARIDES PLASTER.

Cantharides, in powder, 7; Yellow Beeswax, 4; Lard, 4; Resin, 4; Soap Plaster, 1. (nearly 1 in 3)

A corresponding preparation, **Emplastrum Mylabridis**, is Official in the *Ind.* and *Col. Add.* for India and the African and Eastern Colonies.

Official in Austr., Fr. and Mex., 1 in 3; Belg., Dutch, Hung., Ital., Norw., Span. and Swed., about 1 in 3; Dan., Ger., Port., Russ. and Swiss, about 1 in 4.

Emplastrum Cantharidum Perpetuum, Austr., 1 in  $7\frac{1}{2}$ ; Swiss, 3 in 10; Dan., Norw. and Swed., Emp. Canth. cum Euphorbio, about 1 in 7; Hung., 1 in  $5\frac{1}{2}$ ; Ital., about 1 in 3, mite, 1 in 21; Belg., 1 in 8; Ger. and Russ., 1 in 10. Norw. includes an Emplastrum Cantharidis Colatum; Ger. includes an Emplastrum Cantharidum pro usu veterinario (about 1 in 5); Russ., an Emplastrum Cantharidum Ordinarium, 1 in  $3\frac{3}{4}$ .

**LIQUOR EPISPASTICUS.** BLISTERING LIQUID.

10 of Cantharides, percolated with Acetic Ether to produce 20 of Liquor. (1 in 2)

A corresponding preparation, **Liquor Epispasticus Mylabridis**, is Official in the *Ind.* and *Col. Add.* for India and the African and Eastern Colonies.

*See also CANTHARIDIN, below.*

**TINCTURA CANTHARIDIS.** TINCTURE OF CANTHARIDES.

Macerate 1 of Cantharides, in No. 40 powder, with 80 of Alcohol (90 p.e.). (1 in 80)

Now made with Alcohol (90 p.e.) in place of Proof Spirit.

**Dose.**—5 to 15 minims = 0·3 to 0·9 c.c.; if frequently repeated, 2 to 5 minims = 0·12 to 0·3 c.c.

*Ph. Ger.* maximum single dose, 0·5 gramme; maximum daily dose, 1·5 gramme.

**Official in U.S.**, 1 in 20; **Austr., Dan., Ger., Dutch, Ital., Jap., Mex., Port., Russ., Swed. and Swiss,** 1 in 10; **Fr., 1 and 10,** also with Acetic Ether, 1 and 10; **Span., 1 and 12½;** **Belg. and Hung., 1 and 5.** All by weight, except U.S.

**UNGUENTUM CANTHARIDIS.** CANTHARIDES OINTMENT.

Cantharides, bruised, 1; Benzoated Lard, 10: digest at 120° F. (48·9° C.) for 12 hours and strain through calico. (about 1 in 10)

Employed to promote discharge from a blistered surface.

A corresponding preparation, **Unguentum Mylabridis**, is Official in the *Ind.* and *Col. Add.* for India and the African and Eastern Colonies.

**Official in Belg.**, 1 in 11; **Fr.**, Pommade Epispastique Verte, 1 in 33, and P. E. Jaune, 1 in 17; **Ital.**, Pomata di Cantaridi, 1 in 10; **Swiss**, 1 in 7; **Ger.**, about 1 in 3; **Swed.**, 1 in 5 (fort., 1 in 4); **Dan.**, Ung. Canth. Viride, about 1 in 3; **U.S.**, Ceratum Cantharidis, 32 in 100. **Ger.** also has Unguentum Cantharidum pro usu veterinario (1 in 5).

**Not Official.**

**CANTHARIDIN, C<sub>10</sub>H<sub>12</sub>O<sub>4</sub>.**—White, crystalline scales. Melts at 200° C.

**Solubility.**—1 in 1150 of Rectified Spirit; 1 in 700 of Rectified Ether, sp. gr. 0·720; 1 in 55 of Chloroform; 1 in 150 of Acetic Ether, but even when dissolved at 60° F. part separates on standing; 1 in 200 of Almond Oil; 1 in 65 of Oil of Cloves.

Acetone is the best solvent for Cantharidin, which it dissolves 1 in 40, and as it is cheaper it possesses a double advantage over Acetic Ether. Acetone makes a good Liquor Epispasticus; it also dissolves Pyroxylin, and is therefore suitable for making Collodium Vesicans.

**Official in Belg., Dutch, Fr., Mex., Port. and Span.**

**POTASSIUM CANTHARIDATE (Fr. Supp.).**—Colourless, needle-

shaped crystals; soluble in Water; insoluble in Ether and in Chloroform. Should be preserved in well-stoppered bottles.

**Liebreich's solution** contains 0·2 grammme Cantharidin and 0·4 grammme Potassium Hydroxide in 1000 c.c. of sterilised Water. 1 c.c. contains 0·0002 grammme Cantharidin in the form of Potassium Cantharidate. **Dose.**—0·5 c.c.; given hypodermically, also internally in diseases of tubercular origin, in lupus and in syphilis; has since been replaced by a tincture made with Catharidin, 1, in Tincture of Orange Peel, 5000. **Dose.**—0·5 c.c., and never more than 0·75 c.c., mixed with a liqueur-glassful of Water.—*B.M.J.* '02, ii. 1231; *P.J.* '02, ii. 708.

**CHARTA EPISPASTICA** (*B.P.* 1885).—Powdered Cantharides, 4; White Wax, 16; Spermaceti, 6; Olive Oil, 8; Resin, 3; Canada Balsam, 1; Distilled Water, 24. Conveniently spread on paper ruled in divisions of 1 square inch.

**EMPLASTRUM VESICANS.**—Cantharidin, 1; Chloroform, a sufficiency; Beeswax and Wool Fat, in equal proportions, 499 parts. The Chloroform is used to dissolve the Cantharidin, and is afterwards dissipated on a water-bath.—*University.*

**LINIMENTUM CRINALE.**—Cantharidin, 1 grain; Acetic Ether, 6 fl. dram.: dissolve and add Alcohol (90 p.c.), 6 fl. oz.; Castor Oil, 2 fl. oz.; Oil of Lavender, 15 minimis.

This Liniment is highly recommended for application to the head where the hair is falling off; but after applying it a few times the head should be washed or it may accumulate and cause too much irritation. It may be diluted with equal parts (or more) of Alcohol (90 p.c.) for delicate skins.

**LIQUOR CANTHARIDIS CONCENTRATUS.**—1 fl. oz. = 1 oz. of Cantharides. It is obtained by repercolation with Acetic Ether, and is standardised to contain 0·5 p.c. of Cantharidin. This Liquor forms a convenient substitute for Cantharides in making the various preparations; it effects a great saving of time and produces a better result.

Acetone is better as a solvent, but cannot be employed for Official preparations.

**UNGUENTUM STIMULANS** (Erasmus Wilson's).—Cantharides in Powder, 3; Lard, 12: macerate with a moderate heat for twenty-four hours, and filter through paper.

In place of the Cantharides, 6 of Liquor Epispasticus or 3 of Liquor Cantharidis Concentratus may be employed, evaporated to a thin extract, and mixed with the melted Lard.

**BONI'S BLISTER.**—Camphor, 20; Chloral Hydrate, 30; melt and add powdered Cantharides, 10; digest for an hour at 150° F.; filter.—*L.M.R.* '89, 19.

## CAOUTCHOUC.

INDIA-RUBBER.

The prepared milk-juice of *Hevea brasiliensis*, and various

other species. The best commercial variety is known as Para rubber.

**Official Preparation.**—Liquor Caoutchouc. The Liquor is used in the preparation of Charta Sinapis.

**Official in Austr. Add.** (Resina elastica depurata), Fr., Ger., Mex., Span. (Goma Elástica), Swed. and U.S. (Elastica).

**LIQUOR CAOUTCHOUC.** SOLUTION OF INDIA-RUBBER.  
India-rubber, 1; Benzol, 10; Carbon Bisulphide, 10.

## CAPSICI FRUCTUS.

### CAPSICUM.

The dried ripe Fruit of *Capsicum minimum*.

Imported from Zanzibar, and distinguished in commerce as Guinea Pepper, Chillies or Bird Pepper. That from Nepaul has the finest flavour. These in powder are sold as Cayenne Pepper.

It yields its virtues to Water, Alcohol, Ether, Acetic Ether, and the fixed and volatile Oils.

**Medicinal Properties.**—Stimulant, stomachic, and tonic, used chiefly as a condiment. Given in dyspepsia and dipsomania, flatulent distension of hysteria, chronic cystitis, gleet and spermatorrhœa; to induce sleep and promote appetite in delirium tremens. Used externally as a rubefacient in rheumatism and lumbago and for chilblains.

**Dose.**— $\frac{1}{6}$  to 1 grain = 0.01 to 0.06 grammes in pill.

Tinct. Capsici, 1½ drm. (increased); Tinct. Aurant., 4 drm.; Syr. Aurant., 4 drm.; Quinine Hydrochloride, 6 grains; Water, to 6 oz. Take a tablespoonful as required, three to four times a day, in dipsomania.

**Official Preparations.**—Tinctura Capsici, and Unguentum Capsici. The Tincture is contained in Tinctura Chloroformi et Morphinæ Composita.

**Not Official.**—Emplastrum Capsici, Linimentum Capsici, Liquor Capsici Compositus, Oleo-resinæ Capsici, Tinctura Capsici Etherea, Tinctura Capsici Fortior, and Unguentum Oleo-resinæ Capsici.

**Official in Austr. Add., Belg., Dan., Fr. (Poivre de Guinée), Ger., Mex., Port., Russ., Span. (Pimiento), Swed., Swiss, and U.S.**

### TINCTURA CAPSICI. TINCTURE OF CAPSICUM.

Macerate 1 of Capsicum, in No. 20 powder, with 20 of Alcohol (70 p.c.). (1 in 20)

**Dose.**—5 to 15 minims = 0.3 to 0.9 c.c.

Official in Belg., 1 and 5; Mex., 1 in 5; Dan., Dutch Supp., Ger., Russ., Swed. and Swiss, 1 in 10: all by weight. U.S., 1 in 20.

### **UNGENTUM CAPSICI. CAPSICUM OINTMENT.**

Bruised Capsicum, 120 grains; Spermaceti, 60 grains; Olive Oil (by weight), 1 oz.: strain after digestion on a water-bath for one hour.

### **Not Official.**

**EMPLASTRUM CAPSICI.**—Capsicum Oleo-resin, 5; Soap Plaster, 95.—*University.*

**EMPLASTRUM CAPSICI (U.S.).**—Spread an even layer of Resin Plaster on muslin, and allow it to cool; then apply a thin coating of Oleo-resin of Capsicum, by means of a brush, leaving a narrow blank margin along the edges.

Each square inch should contain 1 grain of Oleo-resin of Capsicum.

This plaster is also made with Rubber basis.

**LINIMENTUM CAPSICI.**—Tincture of Capsicum, 3 drm.; Compound Liniment of Camphor, 4 drm.; Methylated Spirit, to 1 oz.—*St. Mary's.*

**LIQUOR CAPSICI COMPOSITUS (Austr. Add.)** Linimentum Capsici Compositum.—Powdered black Pepper and powdered Capsicum fruit, of each, 100; Venice Soap and Camphor, of each, 25; Alcohol (90 p.c.), 800; digest for eight days, express and add oils of Rosemary, Lavender and Cloves, of each, 5; Oil of Cinnamon, 1; Ammonia (10 p.c.), 200.

**OLEO-RESINA CAPSICI.** *Syn.*—**CAPSICIN.**—Obtained by percolating Capsicum with Ether, distilling off the Ether, and straining out the fatty matter which separates. It is a thick liquid of a yellowish-red colour, which becomes very fluid when gently heated, and at a high temperature volatilises.  $\frac{1}{2}$  a grain only, thus volatilised in a large room, will cause all who respire the air of the room to cough and sneeze. It is soluble in Alcohol, Ether, and Oil of Turpentine.

**Dose.**— $\frac{1}{3}$  to  $\frac{1}{2}$  minim = 0.007 to 0.03 c.c.

### **Official in U.S.**

The active principle of Capsicum has been obtained by Thresh in well-defined, pearly white crystals, to which he has given the name **Capsaicin.**—*P.J.* (3) vii. 21.

**TINCTURA CAPSICI ÆTHEREA.**—Substitute Pure Ether for the Alcohol (90 p.c.), of Tinctura Capsici.—*L.* '90, i. 1066.

**TINCTURA CAPSICI FORTIOR** (Turnbull's Tincture of Capsicum).—Capsicum, in No. 40 powder, 10; percolated with Alcohol (90 p.c.), *q.s.* to yield 30.

This has been added to B.P.C. formulary.

Used externally for swollen chilblains as a counter-irritant, but

*not* when the skin is *broken*. For chilblains, saturate a piece of sponge or flannel with the Tincture, and rub the chilblain well until a strong tingling is produced; continue daily until recovery. A small dossier of lint or cotton, dipped into the Tincture, is an excellent remedy for toothache.

Used by aurists to paint behind the ears as a counter-irritant, but a solution of Volatile Oil of Mustard is better.

**Dose.**—1 to 3 minims = 0·06 to 0·18 c.c., but principally used externally.

**UNGUENTUM OLEO-RESINÆ CAPSICI (B.P.C.)**—Oleo-resin of Capsicum, 2; Yellow Wax, 1; Bezoated Lard, 8. Melt the Wax and Lard at a low temperature, add the Oleo-resin, mix, and strain if necessary. Stir till cold.

When diluted 3 to 6 times it forms a mild counter-irritant.

### Not Official.

## CARBO ANIMALIS.

ANIMAL CHARCOAL. BONE BLACK.

This substance and the purified Animal Charcoal are now deleted from B.P. They are used in Pharmacy chiefly as decolorising and deodorising agents.

## CARBO LIGNI.

WOOD CHARCOAL.

A black, odourless, tasteless powder, free from gritty matter, and prepared by exposing wood to a red heat without access of air.

Oak, Beech, Hazel, Willow, and Poplar are employed.

6 samples examined, showed 2 to 7 p.c. of ash.—P.J. (3) xx. 946.

**Medicinal Properties.**—Antiseptic, absorbent and deodoriser. Given in cases of distension by intestinal gas, and in foul eructations and diarrhoea in dysentery and typhoid; also in dyspepsia attended with flatus, acidity and pain. It will absorb and neutralise poisonous alkaloids. Externally, as a poultice, it cleanses and absorbs the fetor of ulcers and gangrenous parts.

**Dose.**—60 to 120 grains = 3·9 to 7·7 grammes.

**Prescribing Notes.**—*It has been given in powder diffused in Water, also in the form of capsules, cachets, and biscuits. The most palatable way is to mix it with chocolate.*

**Official in Austr., Belg., Dutch, Fr., (Charbon Végétal), Ger., Hung., Ital., Mex., Port., Russ., Span., Swiss and U.S.**

**CARBONIS BISULPHIDUM.**

CARBON BISULPHIDE.

*B.P. Syn.*—CARBON DISULPHIDE.CS<sub>2</sub>, eq. 75·55.

A colourless, limpid, very volatile, highly refractive liquid, having an ethereal and not unpleasant odour when quite pure, but usually possessing a very disagreeable odour due to impurity.

Should be preserved in well stoppered bottles or in tin cans, in a cool atmosphere and away from naked flames, and not exposed to light.

**Solubility.**—About 1 in 500 of Water, readily soluble in Absolute Alcohol, Ether (sp. gr. 0·720), Chloroform, and the fixed and volatile Oils.

It is a good solvent for Iodine, Phosphorus, Precipitated Sulphur, etc.

**Medicinal Properties.**—It is official as a solvent for India-rubber and Phosphorus. It is a powerful poison and is not often given internally.

One or two ounces daily of a saturated Solution in Peppermint Water have been given as a substitute for Bergeon's treatment of phthisis.—*B.M.J.* '88, i. 421.

**Official Preparations.**—Used in the preparation of Liquor Caoutchouc and Pilula Phosphori.

**Official in** Belg., Fr., Port., Span. and U.S.

**CARDAMOMI SEMINA.**

CARDAMOM SEEDS.

The dried, ripened Seeds of *Elettaria Cardamomum*. *B.P.* states that the seeds should be kept in their pericarps, and separated when required for use.

1 of Fruit yields about  $\frac{3}{4}$  of Seeds.

**Medicinal Properties.**—Stomachic, carminative, stimulant; a useful adjuvant to purgatives to prevent griping.

**Official Preparation.** — Tinctura Cardamomi Composita. Contained in Extractum Colocynthidis Compositum, Pulvis Cinnamomi Compositus, Pulvis Cretæ Aromaticus, Tinctura Gentianæ Composita, Tinctura Rhei Composita. Of the Tincture contained in Decoctum Aloes Compositum, and Mistura Sennæ Composita.

**Not Official.**—Oleum Cardamomi, Tinctura Cardamomi, and Tinctura Carminativa.

Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.

**TINCTURA CARDAMOMI COMPOSITA.** COMPOUND TINCTURE OF CARDAMOMS.

Cardamom Seeds, bruised, 1 oz.; Caraway Fruit, bruised, 1 oz.; Raisins of Commerce, freed from seeds 8 oz.; Cinnamon Bark, bruised, 2 oz.; Cochineal, in powder, 220 grains; macerated with 80 fl. oz. of Alcohol (60 p.c.). (1 in 80)

Dose.— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

Official in U.S., 1 of fruit in 50, contains Glycerin.

Not Official.

**OLEUM CARDAMOMI.**—A pale aromatic Oil distilled from Cardamom Seeds, which contains about 4 to 6 p.c. Sp. gr. 0·900 to 0·940.

**TINCTURA CARDAMOMI.**—Cardamom Seeds, bruised, 1; Alcohol (60 p.c.), q.s. to yield 10; by percolation.

Dose.—30 to 60 minimis = 1·8 to 3·6 c.c.

Official in Port. and Swiss, 1 in 5 by weight; U.S., 1 in 10.

**TINCTURA CARMINATIVA (B.P.C.).**—Cardamom Seeds, bruised, 600 grains; Stronger Tincture of Ginger (B.P. '85), 1 $\frac{1}{4}$  fl. oz.; Oil of Cinnamon, 100 minimis; Oil of Caraway, 100 minimis; Oil of Cloves, 100 minimis; Alcohol (90 p.c.), q.s. to yield 20 fl. oz.: macerate the Cardamoms in 15 fl. oz. of the Spirit for a week, decant, express, and dissolve the Oils in the mixed Tinctures, and add the remainder of the Alcohol.

Dose.—2 to 10 minimis = 0·12 to 0·6 c.c.

Introduced as a flavouring agent.

By replacing the 600 grains of Cardamom Seeds by 24 minimis of Oil of Cardamoms the maceration is avoided.

## CARUI FRUCTUS.

### CARAWAY FRUIT.

The dried Fruit of *Carum Carvi*.

Cultivated in different parts of Europe. The herb flowers in the second year, and the fruit ripens in July or August. Yields from 3 to 7 p.c. of Oil, varying with the source of the Seeds.

**Medicinal Properties.**—Aromatic, stomachic, and carminative. Used occasionally in flatulent colic, as an adjuvant to other medicines, and to prevent griping of purgatives.

**Official Preparations.**—Aqua Carui, and Oleum Carui. Contained in Confectio Piperis, Pulvis Opii Compositus, Tinctura Cardamomi Composita, Tinctura Sennæ Composita. The Oil is contained in Pilula Aloes Barbadensis.

Official in Austr., Belg., Fr., Ger. (Kummel), Mex. (Alcaravea), Port. (Alcaravie), Span. (Alcarabea), Swed., Swiss and U.S.

**AQUA CARUI.** CARAWAY WATER.

Caraway Fruit, 1; Water, 20; distil 10. (1 in 10)

**Dose.**—1 to 2 fl. oz. = 28·4 to 56·8 c.c.

Official in Swed.

**OLEUM CARUI.** OIL OF CARAWAY.

The Oil distilled from Caraway Fruit.

**Dose.**— $\frac{1}{2}$  to 3 minims = 0·03 to 0·18 c.c.

Official in Austr., Dutch Supp., Fr. (Huile Volatile de Carvi); Port., Swiss and U.S.

**Carvone.**—Sp. gr. 0·960. When obtained from the Oils of Caraway and Dill it is dextrogyrate, and Lævogyrate when obtained from Oil of Spearmint.

Official in Ger. and Swed. in place of the Oil.

**CARYOPHYLLUM.**

CLOVES.

The dried Flower-buds of *Eugenia caryophyllata*.

Imported from Penang, Bencoolen, Amboyna, and Zanzibar. Yield from 15 to 18 p.c. of Oil.

**Medicinal Properties.**—Stimulant, aromatic, and carminative, antispasmodic, antiseptic. Administered to check nausea, vomiting, and flatulence, and to promote digestion. But chiefly used as an adjuvant to other medicines. The oil is a useful ingredient in liniments for whooping-cough and bronchitis; it is also used as an anodyne in toothache.

**Dose.**—5 to 10 grains = 0·32 to 0·65 gramme.

**Prescribing Notes.**—The Oil may be given on a lump of Sugar, and is a useful constituent of aperient pill masses. The Infusion is a nice flavouring for many mixtures.

**Incompatibles.**—See under Infusum Caryophylli.

**Official Preparations.**—Infusum Caryophylli, and Oleum Caryophylli. Used in the preparation of Infusum Aurantii Compositum. Contained in Pulvis Cretæ Aromaticus. The oil is contained in Pilula Colocynthidis Composita, and Pilula Colocynthidis et Hyoscyami.

Official in Austr., Belg., Dan., Fr. (Girofles), Ger., Hung., Ital. (Garofani), Jap., Mex. (Clavo de Especia), Norw., Port. (Cravinho), Russ., Span. (Clavo), Swed., Swiss and U.S.

**INFUSUM CARYOPHYLLI.** INFUSION OF CLOVES.

Cloves, bruised, 1; Distilled Water, boiling, 40: infuse for fifteen minutes; strain. (1 in 40)

**Dose.**— $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 c.c.

**Incompatibles.**—Lime Water, salts of Iron, mineral acids, Gelatin.

### OLEUM CARYOPHYLLI. OIL OF CLOVES.

A pale yellow limpid liquid possessing a characteristic aromatic odour and taste ; distilled from Cloves.

**Solubility.**—1 in 60 of Alcohol (60 p.c.) ; in all proportions of Alcohol (90 p.c.), Ether, and Strong Acetic Acid.

**Dose.**— $\frac{1}{2}$  to 3 minims = 0·03 to 0·18 c.c.

**Official** in Austr., Belg., Dan., Dutch, Fr., Ger. (Eugenol), Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed. (Eugenol), Swiss and U.S.

**Eugenol**, the principal constituent of Clove Oil, is a phenol having the formula,  $C_{10}H_{12}O_2$ . The percentage of Eugenol in the Oil varies between 70 and 90 p.c., and it is found that a 'stem' Oil yields as high an average as that from the flower-buds.

**Eugenolform** (Sodium Eugenol Carbinol).—Colourless foliaceous crystals, readily soluble in water ; slightly soluble in Alcohol (90 p.c.) ; insoluble in Ether. Introduced as an intestinal and stomachic antiseptic.—P. J. '99, ii. 40.

**Dose.**— $7\frac{1}{2}$  to 15 grains = 0·5 to 1 gramme, twice a day.

### CASCARA SAGRADA.

#### CASCARA SAGRADA.

*B.P. Syn.*—RHAMNI PURSHIANI CORTEX; SACRED BARK.

The dried Bark of *Rhamnus Purshianus*.

Obtained from California, best collected in spring and early summer. Bark which has been gathered for two years is much preferred to the recently dried bark.

**Cascara Amarga**, known also as Honduras Bark, is obtained from Mexico.

**Medicinal Properties.**—Tonic laxative. Acts principally on the large intestine. Indicated in obstinate and habitual constipation, especially of old persons, and in an atonic condition of the stomach and bowels, as in anaemia. It should not be given as a purgative, but in such a constant continuous manner that a normal condition will be brought about. It is better to give two small doses, say 20 minims of the liquid extract night and morning, than one large dose. The dose should be reduced gradually.

**Prescribing Notes.**—Usually given in the form of Extract in Pills or Pilules, or one of the fluid preparations. The Extract is best made into Pills with the addition of one-tenth of its weight

*of Gum Acacia in powder, and massed with Alcohol (90 p.c.). It is also advantageously combined with Extract of Belladonna, Extract of Nux Vomica, and Euonymin. Obtainable in the form of Compressed Tablets. Capsules may be had containing a very concentrated Fluid Extract, equivalent to 15 and 30 minims of the ordinary Fluid Extract, and other strengths as desired. In Mixtures and other fluid preparations it goes well with Aromatic Spirit of Ammonia and Spirit of Chloroform.*

Elixir of Cascara (Kasak) is an agreeable and reliable preparation. See below.

**Official Preparations.**—Extractum Cascaræ Sagradæ, Extractum Cascaræ Sagradæ Liquidum, and Syrupus Cascaræ Aromaticus.

**Not Official.**—Capsules of Cascara, Elixir of Cascara (Kasak), Extractum Cascaræ Liquidum Insipidum, Mistura Cascaræ Sagradæ, Mistura Laxativa, Vinum Rhamni Purshiani.

**Official in Austr., Dan., Dutch Supp., Fr., Ital., Mex., Norw., Russ., Swed., Swiss and U.S.**

**EXTRACTUM CASCARÆ SAGRADÆ.** EXTRACT OF CASCARA SAGRADA. *B.P.Syn.*—EXTRACTUM RHAMNI PURSHIANI.

Moisten Cascara Sagrada, in No. 20 powder, with Distilled Water, and let it remain a few hours to soften and swell; then place it loosely in a percolator and percolate with more Distilled Water until it is exhausted. Evaporate on a water-bath to dryness.

It is now an aqueous, instead of an alcoholic extract, and evaporated to dryness.

**Dose.**—2 to 8 grains = 0·13 to 0·52 grammes.

**Official in Fr., Ital., Mex. and Russ.**

**EXTRACTUM CASCARÆ SAGRADÆ LIQUIDUM.** LIQUID EXTRACT OF CASCARA SAGRADA. *B.P.Syn.*—EXTRACTUM RHAMNI PURSHIANI LIQUIDUM.

5 of Cascara Bark exhausted by percolation with Distilled Water; the percolate evaporated to 3; 1 of Alcohol (90 p.c.) mixed with 1 of Distilled Water is added, and the whole is made up to 5 by the addition of more Water if necessary.

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

Sometimes given with Ferri et Ammonii Citras and Ammonia.

**Official in Austr., Dan., Dutch Supp., Ital., Mex., Norw., Russ., Swed., Swiss and U.S., with dilute Spirit.** Dan. and Swed. contain Glycerin.

**SYRUPUS CASCARÆ AROMATICUS.** AROMATIC SYRUP OF CASCARA.

Liquid Extract of Cascara Sagrada, 8; Tincture of Orange, 2; Alcohol (90 p.c.), 1; Cinnamon Water, 3; Syrup, 6.

(1 of Liquid Extract in  $2\frac{1}{2}$ )

The same formula as Elixir Cascarae Sagradæ, B.P.C. (1891).

**Dose.**— $\frac{1}{2}$  to 2 fl. drm. = 1·8 to 7·1 c.c.

### Not Official.

**CAPSULES OF CASCARA.**—Two strengths, containing concentrated Extract equal to 15 and 30 minims respectively of Fluid Extract.

**ELIXIR OF CASCARA** (Kasak).—Under this title is sold a proprietary preparation of Cascara, which is palatable, uniform, and reliable.

**Dose.**— $\frac{1}{2}$  fl. oz. = 14·2 c.c. for an adult; 1 or 2 fl. drm. = 3·6 to 7·1 c.c. for a child.

**EXTRACTUM CASCARÆ SAGRADÆ LIQUIDUM INSIPIDUM** (B.P.C.).—Mix 40 of Cascara Bark in No. 40 powder, with 4 of Light Magnesia, and macerate with 30 of Water for 24 hours, then dry over a water-bath and reduce to powder. This powder is percolated with Alcohol (60 p.c.) till exhausted. The first 34 of percolate are reserved, the Alcohol distilled from the remainder and residue evaporated to soft extract, which is dissolved in the reserved portion, and sufficient Alcohol (90 p.c.) added to yield 40.

**Dose.**— $\frac{1}{2}$  to 2 fl. drm. = 1·8 to 7·1 c.c.

This preparation, introduced in B.P.C. 1901, is based upon experiments published in P.J. and C.D. in 1888 and 1889. There is a similar preparation in Austr. Add., named Extractum Rhamni Purshianæ Fluidum; and in Dutch Supp., Extractum Rhamni Purshianæ Liquidum Desamaratum.

**MISTURA CASCARÆ SAGRADÆ.**—Liquid Extract of Cascara, 30 minims; Liquid Extract of Liquorice, 30 minims; Aromatic Spirit of Ammonia, 20 minims; Chloroform Water, to 1 fl. oz.—*St. Thomas's.*

**MISTURA LAXATIVA.**—Liquid Extract of Cascara Sagrada, 1 fl. drm.; Liquid Extract of Liquorice, 1 fl. drm.; Sodium Bicarbonate, 5 grains; Chloroform Water, to 1 fl. oz.—*University.*

**VINUM RHAMNI PURSHIANI** (Austr. Add.).—Malaga Wine, 150; Gelatin, 0·2 dissolved in 2 of Water, add Fluid Extract of Cascara Sagrada, 100; Syrup of Orange, 50. Digest eight days and filter.

## CASCARILLA.

### CASCARILLA.

The dried Bark of *Croton Eluteria*.

It contains from  $\frac{1}{2}$  to 2 p.c. of an aromatic Oil.

**Medicinal Properties.**—Aromatic and stomachic. With some physicians it is a favourite bitter tonic. Used in dyspepsia, chronic diarrhoea, dysentery, and in recovery from acute diseases.

**Prescribing Notes.**—*The Infusion quickly changes, and will scarcely keep good for a day in summer, but when prescribed with an aromatic Tincture it keeps well.*

*The Tincture is frequently prescribed with diluted mineral acids, which, however, usually cause a separation of resin.*

**Official Preparations.**—Infusum Cascarillæ and Tinctura Cascarillæ.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Ital., Jap., Norw., Port., Russ., Swed., Swiss and U.S.** An extract is official in Ger.

#### **INFUSUM CASCARILLÆ. INFUSION OF CASCARILLA.**

Cascarilla, in No. 10 powder, 1; boiling Distilled Water, 20: infuse for fifteen minutes; strain. (1 in 20)

Half the strength of B.P. '85.

**Dose.**— $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 grammes.

**Incompatibles.**—Lime Water and metallic salts.

#### **TINCTURA CASCARILLÆ. TINCTURE OF CASCARILLA.**

1 of Cascarilla, in No. 40 powder, percolated with Alcohol (70 p.c.), to yield 5. (1 in 5)

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

**Official in Austr., 1 in 10; Belg., Dan., Fr., Ital., Jap., Norw., Russ., Swed. and Swiss, 1 in 5.**

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#### **Not Official.**

#### **CASSIÆ OLEUM.**

#### **OIL OF CASSIA.**

A yellowish or brownish liquid, becoming darker and thicker by age and exposure to the air, having the characteristic odour of Cassia, and a sweetish, spicy, and burning taste. It is a volatile Oil distilled from *Cinnamomum Cassia*.

Sp. gr. 1·055 to 1·065.

**Soluble** in an equal volume of Alcohol, the solution being slightly acid to Litmus paper; also soluble in an equal volume of Glacial Acetic Acid.

This Oil is Official in the German and U.S. Pharmacopœias under the name ‘Oleum Cinnamomi.’

Schimmel states that this Oil is freely adulterated, and that genuine samples should contain at least 75 p.c. of Cinnamic Aldehyde. *Ger.* requires at least 70 p.c.

It should be preserved in well stoppered bottles, in a cool place, and away from the light.

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Not Official.

**CASSIA BEAREANA.**

A small tree, attaining the height of 20 or 30 feet, growing in equatorial East Africa. A decoction of the roots has been recommended in the treatment of blackwater fever and in haematuria. The decoction is prepared by the natives by boiling about a dozen pieces of the root, about 1 inch long, in a gallon of water, and it is administered in teacupful doses. The powdered bark is applied as a dressing to ulcers.—*L.* '02, i. 283; '03, i. 190; *P.J.* '01, ii. 616; '02, i. 42; *C.D.* '03, i. 372.

A fluid extract (1 in 1) is also made, dose 30 to 60 minims = 1·8 to 3·6 c.c.

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**CASSIÆ PULPA.****CASSIA PULP.**

The Pulp from the Fruits of *Cassia Fistula*.

Imported from the East or West Indies.

**Medicinal Properties.**—Laxative. Useful in small doses for habitual constipation. Large doses occasion nausea, flatulence, and griping; generally given in combination, as in Confection of Senna.

**Dose.**—60 to 120 grains = 4 to 8 grammes, as a laxative; 1 to 2 oz. = 28·4 to 56·8 grammes, as a purgative.

**Official Preparation.**—Contained in *Confectio Sennæ*; 1 part in 8 nearly.

**Official in Austr., Fruit and Pulp; Belg., Fruit and Extract; Fr., Pulpe de Casse, also Extrait de Casse; Ital., Mex., Port., Span., Swiss and U.S., Fruit.**

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Not Official.

**CASTOREUM.**

The dried preputial follicles and their secretion, obtained from the Beaver, *Castor Fiber*, the oil sacs being rejected.

**Medicinal Properties.**—Moderately stimulant and antispasmodic; occasionally used in hysteria and spasmodic disorders.

**Dose.**—Of the powder 5 to 10 grains = 0·32 to 0·65 gramme.

**Prescribing Notes.**—*The Tincture when mixed with Water will yield a deposit after a time; it should therefore be prescribed with Mucilage of Gum Acacia.*

**Official in all except Ger., Jap., Swed. and U.S.** Both the Canadian and Russian varieties are Official in Russ.

**TINCTURA CASTOREI.**—Castor, in coarse powder, 1; Alcohol

(90 p.c.), 20; macerate seven days, agitating occasionally, strain, press, and add Alcohol q.s. to yield 20. (1 in 20)

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

**Official in Austr., Dan., Hung., Norw. and Port., 1 in 5; Dutch, 1 in 8; Belg., Fr., Ital., Russ. and Swiss, 1 in 10; Mex., 1 and 10; Span., 1 in 25; all by weight.**

Russ. contains a Tincture made with Russian, and also one made with Canadian Castor.

## CATECHU.

CATECHU.

*B.P.Syn.*—CATECHU PALLIDUM.

An extract of the Leaves and young Shoots of *Uncaria Gambier*.

Prepared in Singapore and in other places in the Eastern Archipelago.

Terra Japonica is a trade term (now almost obsolete) applied both to Cutch and Gambier.

**Solubility.**—Almost entirely soluble in boiling Water. 70 to 75 p.c. is soluble in Alcohol (90 p.c.). 50 to 60 p.c. is soluble in cold Water, and the solution is bright.

**Medicinal Properties.**—A powerful astringent. Used chiefly in diarrhoea and dysentery, also as an astringent for haemorrhage and discharges from mucous membranes. Lozenges are the best medium for administering it in relaxed conditions of the throat and in ulcers of the mouth.

**Dose.**—5 to 15 grains = 0·32 to 1 grammie.

**Incompatibles.**—The Alkalies, metallic salts, and Gelatin.

**Official Preparations.**—Pulvis Catechu Compositus, Tinctura Catechu, and Trochiscus Catechu.

**Official in Ger., Jap., Port. (Cato).** See below CATECHU NIGRUM.

**PULVIS CATECHU COMPOSITUS.** COMPOUND POWDER OF CATECHU.

Catechu, 4; Kino, 2; Krameria Root, 2; Cinnamon Bark, 1; Nutmeg, 1. (1 in 2 $\frac{1}{2}$ )

Keep it in a stoppered bottle.

**Dose.**—10 to 40 grains = 0·65 to 2·6 grammes.

**TINCTURA CATECHU.** TINCTURE OF CATECHU.

Catechu, in coarse powder, 4; Cinnamon Bark, bruised, 1; Alcohol (60 p.c.), 20: prepare by the maceration process.

Now 1 in 5 instead of 1 in 8.

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

Official in U.S. (Tinct. Catechu Co.), 1 in 10; Austr., Belg., Fr. (Tinct. Cachou), Dutch, Ger., Ital., Jap., Port. and Swiss, 1 in 5; Mex., 1 and 5; all by weight (except U.S.), and with Black Catechu.

### TROCHISCUS CATECHU. CATECHU LOZENGE.

1 grain of Catechu in each, with Simple Basis.

**Dose.**—1 to 6 lozenges.

Official in U.S., 1 grain Black Catechu in each; Belg. (Tabella), 3 grains in each; Dutch, about 1 $\frac{1}{2}$  grains in each.

### CATECHU NIGRUM. BLACK CATECHU.

A dried extract from the wood of *Acacia Catechu*. It is also known as **Pegu Catechu** and **Cutch**. It generally occurs in irregularly shaped blackish-brown masses, astringent, and bitter in taste. *U.S.P.* and the *Ind.* and *Col. Add.* put the limit of ash at 6 p.c.

**Solubility.**—About 80 to 90 p.c. is dissolved by cold Water, the solution being very turbid. In Alcohol (90 p.c.) *U.S.P.* requires at least 85 p.c. to be soluble, the *Ind.* and *Col. Add.* states 80 p.c.

**Dose.**—5 to 15 grains = 0·32 to 1 grammie.

Official in the *Ind.* and *Col. Add.* for India, Eastern Colonies and North American Colonies, within which it may be used in making the B.P. preparations for which Catechu is ordered.

Official in Austr., Belg., Dutch, Fr. (Cachou), Ger., Ital., Jap., Mex., Port. (Cato), Russ., Span., Swiss and U.S. Dutch Supp., Catechu Depuratum.

### Not Official.

### CAULOPHYLLUM.

#### BLUE COHOSH.

The Rhizome and Roots of *Caulophyllum rhalictroides*.

Official in U.S.

**Caulophyllin**, an eclectic remedy in the form of a brown powder, has been recommended as an emmenagogue, sedative and diuretic. Also employed with success as an anthelmintic. Given in the form of a 1 in 20 decoction or infusion, or as a 1 in 5 tincture. Best given in form of pill.

**Dose.**—1 to 4 grains = 0·06 to 0·26 grammie. Of the decoction or infusion, 1 to 2 fl. oz. = 28·4 to 56·8 c.c. Of the tincture, 1 to 2 fl. dram. = 3·6 to 7·2 c.c.

A fluid extract and a compound fluid extract are also prepared.

**CERA FLAVA.****YELLOW BEESWAX.**

A hard, yellow, or yellowish-brown, waxy solid, formed by the Hive-Bee, *Apis mellifica*.

When quite fresh, is of a golden yellow, but on keeping gets darker.

**Solubility.**—Entirely in Oil of Turpentine, insoluble in Alcohol (90 p.c.); slightly, and not uniformly, soluble in (cold) Ether; about 1 in 100 of boiling Alcohol (90 p.c.); 1 in 10 of boiling Ether.

**Medicinal Properties.**—Chiefly used in medicine as an ingredient of plasters and ointments, and is preferable to White Beeswax for the purpose, the ointments keeping a long time without becoming rancid.

**Official Preparation.**—Cera Alba. Used in the preparation of Emplastrum Calefaciens, Emplastrum Cantharidis, Unguentum Menthol, Emplastrum Picis, Unguentum Hydrargyri Compositum, Unguentum Picis Liquidæ, Unguentum Resinæ and Unguentum Staphisagriæ.

**Not Official.**—Aseptic Wax.

**Official in Austr., Belg., Dan., Dutch, Fr. (Cire Jaune), Ger., Hung., Ital., Jap., Mex. (Cera Amarilla), Norw., Port. (Cera Amarella), Russ., Span., Swed., Swiss and U.S.**

**CERA ALBA. WHITE BEESWAX.**

A white, or almost white, waxy, somewhat translucent solid, or in thin circular white cakes, obtained by air-bleaching yellow Beeswax.

**Official Preparations.**—Contained in Pilula Phosphori, Suppositoria Acidi Carbolici, Unguentum Aquæ Rosæ, and Unguentum Cetacei.

**Official in Austr., Belg., Dan., Dutch Supp., Fr., Ger., Hung., Ital., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

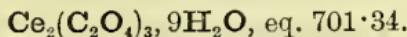
**Not Official.**

**ASEPTIC WAX.**—Beeswax, 87; Almond Oil, 12; Salicylic Acid, 1. Melt the Beeswax and Oil, strain through muslin, add the Salicylic Acid, heat to 150° C. (300° F.) in an oil-bath; allow to cool slightly, pour into stoppered bottles, which have been sterilised, and when cold add to each bottle sufficient aqueous solution of Mercuric Chloride (1 in 500) to cover the Beeswax.

This Wax was made by us for Sir Victor Horsley, who uses it for arresting haemorrhage from cranial bones, by smearing it over the bleeding surface.—*B.M.J.* '92, i. 1165.

**CERII OXALAS.**

CERIUM OXALATE.



A white, or almost white, odourless, and tasteless granular powder, insoluble in Water, prepared by decomposing a soluble Cerium salt with a soluble Oxalate. Commercial samples usually contain the Oxalates of Lanthanum and Didymium.

**Medicinal Properties.**—Gastric sedative. Given in chronic vomiting, and vomiting during pregnancy, and of phthisis; also in dyspepsia, gastrodynia, and pyrosis. It has been recommended in sea-sickness, in doses of 10 to 20 grains every three hours. Given with success in spasmodic cough of gastric origin.

Cerium Oxalate in the gastric crisis of Tabes.—*L.* '96, ii. 551.

**Dose.**—2 to 10 grains = 0·13 to 0·65 grammes.

**Prescribing Notes.**—It is taken in 5 to 15 grain doses as a powder mixed with a little Water; also given in *cachets*.

*It can be safely administered in 10 grain doses, three times a day for many days in succession; the only unpleasant symptom when so used was slight dryness of the mouth; that appeared after several days. It was most efficacious in the treatment of chronic cough, and the initial dose should be 5 grains. It did not disturb the stomach; on the contrary, it relieved nausea and improved digestion.—Conclusions arrived at by the Committee of the New York Therapeutical Society on April 9, 1880, 'New York Medical Record,' May 1, 1880.*

**Official in Dutch, Oxalas Cerosus; Mex. and Port., Oxalato de Cerio; Jap. and Swiss, Cerium Oxalicum; U.S.**

**CETACEUM.**

SPERMACETI.

White, odourless, somewhat translucent, crystalline, pearly masses, unctuous to the touch, and having a bland mild taste. It is a peculiar, concrete, fatty substance obtained from the Sperm Whale, *Physeter macrocephalus*, occurring chiefly in a cavity in the head, but also obtained from smaller cavities in the body.

The Sperm Whale inhabits the Pacific and Indian Oceans.

Cetine or Cetyl Palmitate, when saponified yields Ethal (Cetyl Hydrate), and not Glycerin (Glyceryl Hydrate). Most Oils and Fats are Oleates, Palmitates, and Stearates of Glyceryl, which when saponified yield Glycerin and Oleates, Palmitates and Stearates of the metals.

**Solubility.**—Slightly in Alcohol (90 p.c.) ; 1 in 80 of boiling Alcohol (90 p.c.) ; 1 in 6 of Ether ; 4 in 5 of Chloroform ; and in the fixed and volatile Oils.

**Medicinal Properties.**—Emollient. It is much employed for ointments and cerates.

**Official Preparations.**—Unguentum Cetacei. Contained in Unguentum Aquae Rosæ, and Unguentum Capsici.

**Not Official.**—Unguentum Cetacei sine Benzoino.

**Official in all.** Fr., Blanc de Baleine ; Ital., Cetina ; Mex., Esperma ; Span., Esperma de Ballena.

### UNGUENTUM CETACEI. SPERMACETI OINTMENT.

Spermaceti, 5 ; White Beeswax, 2 ; Almond Oil (by weight), 18 ; Benzoin, in coarse powder,  $\frac{1}{2}$ . Melt together the Spermaceti, Beeswax, and Almond Oil ; add the Benzoin, and, frequently stirring the mixture, continue the application of heat for two hours ; remove from the source of heat ; strain ; and stir the Ointment constantly until cold.

It would be better to omit the Benzoin, which was first added in 1885 ; it converts this emollient preparation into one which is irritating : *see below*.

The following are called **Unguentum Cetacei**—(all by weight) :—

*Dan.* Spermaceti 3, White Wax 1, Oil of Almonds 24, Rose Water 12.

*Norw.* Spermaceti 6, White Wax 6, Oil of Almonds 58, Rose Water 30.

*Russ.* Spermaceti 3, White Wax 3, Olive Oil 14, Rose Water 2.

*Swed.* Spermaceti 2, White Wax 1, Oil of Almonds 12, Rose Water 5.

The following are called **Ceratum Cetacei**—(all by weight) :—  
*Austr.* Spermaceti, White Wax, Oil of Almonds, equal parts.

*Hung.* Spermaceti 8, White Wax 8, Lard 9.

*Port.* Spermaceti 1, White Wax 1, Oil of Almonds 3.

*Span.* Spermaceti 3, White Wax 2, Oil of Almonds 16, Rose Water 10.

*U.S.* Spermaceti 2, White Wax 7, Olive Oil 11.

The following are called **Unguentum Leniens**—(all by weight) :—

*Dutch*, Spermaceti 10, Yellow Wax 5, Olive Oil 60, Water 25, Otto of Rose 0.1.

*Ger.* Spermaceti 8, White Wax 7, Almond Oil 57, Water 28, Otto of Rose 0.1.

**Unguentum Refrigerans**—(all by weight) :—

*Swiss*, Spermaceti 2, White Wax 1, Almond Oil 12, Rose Water 25.

**Pomata con Olio di Mandorle:**—

*Ital.* Spermaceti 1, White Wax 1, Oil of Almonds (by weight) 8.

**Not Official.**

**UNGUENTUM CETACEI SINE BENZOINO.**—Spermaceti 5, White Beeswax, 2; Almond Oil, 18.

The B.P. ointment made with Benzoin is unsuited for many purposes for which this ointment is useful, such as eye ointments, ointment for piles, etc.

Used as a cooling dressing. Applied on lint to broken blisters from walking, it affords great relief, and frequently enables persons to continue the exercise without serious discomfort. It is also recommended for smearing on the feet before starting for a long walk on rough ground.

**COLD CREAM.**—White Beeswax, 1; Spermaceti, 1; Oil of Almonds, 8; Rose Water, 11; Otto of Rose to perfume it. Melt together, by means of a water-bath, the Oil, Spermaceti, and Beeswax, add the Otto, strain through muslin into the Rose Water; stir together whilst gently warming until water globules are no longer visible, and the mixture is of proper consistence to pour into pots without separating.

Cold Cream is a synonym for Unguentum Cetacei *Swed.*, and Unguentum Leuiens *Ger.*

**Not Official.**

**CETRARIA.****ICELAND MOSS.**

The dried Lichen, *Cetraria Islandica*. A native of the north of Europe.

It contains a bitter principle **Cetrarin** (Cetraric Acid), which has been used as a tonic.

**Medicinal Properties.**—Demulcent, nutritious, and slightly tonic.

Iceland Moss Jujubes are useful for coughs.

**Official in** Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Port., Spau. and Swiss, *Lichen Islandicus*; Mex., *Liquen de Islandia*; U.S., *Cetraria*.

**DECOCTUM CETRARIAE.**—Iceland Moss, 1; first wash with cold water, then add Distilled Water, 20; boil ten minutes, strain with gentle pressure whilst hot and wash the marc to make 20.

(1 in 20)

**Dose.**—1 to 4 fl. oz. = 28·4 to 113·6 grammes.

**Official in** Ital. and U.S., 1 in 20; Belg., 1 in 25; Dutch, 6 in 100; Fr. (Tisane), 1 in 100; Span., 1 in 67; Ital. has also Infusion, 1 in 20.

**SACCHARUM CETRARIÆ.**—Iceland Moss 1, Sugar 1, Water 100. Wash the Iceland Moss with Water to remove the bitterness, then boil with 100 of Water, strain and express lightly, and in the strained liquid dissolve the Sugar and evaporate on a water-bath. When sufficiently firm remove from the bath and dry in a cupboard to a powder or scale.

Official in Dutch Supp., and also a tasteless preparation.

**GELATINA CETRARIÆ** (Iceland Moss Jelly). — Saccharated Cetraria 2, Sugar 1, Water 5. Mix, boil gently till scum collects on the surface, then withdraw the heat, remove the scum, and pour into pots to cool.

A similar preparation is given in Austr., Belg., Dutch Supp., Fr., Ital., Port. and Span. Dutch Supp. also tasteless.

### CARRAGEEN. IRISH MOSS.

The dried Seaweed *Chondrus crispus*. It is used as an article of food on the west coast of Ireland, where it abounds. Has been proposed as a substitute for Acacia as an emulsifying agent and for the suspension of some powders.

Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital. (Fuco Carageo), Mex. Port., Span., Swiss and U.S.

**SACCHARUM CARRAGEEN.**—Made like Saccharum Cetrariæ.

Official in Dutch Supp.

**GELATINA CARRAGEEN** (Irish Moss Jelly).—Made like Gelatina Cetrariæ.

Official in Austr., Belg., Dutch Supp., Fr. and Port.

### Not Official.

### CHAULMUGRA OIL. See GYNOCARDIÆ OLEUM.

### Not Official.

### CHELIDONIUM.

#### CELANDINE.

The entire Plant *Chelidonium majus*.

Official in U.S.; an extract is Official in Dutch Supp.

The juice has been used in opacities of the cornea, and is a popular application for the cure of warts.—*B.M.J.* '97, i. 25 and 354.

Has been recommended chiefly by Denisenko in the treatment of cancer. He uses the extract in doses of 20 to 75 grains daily for internal cancers, and for external cancers it is supplemented by parenchymatous injections, for which he employs about 1 c.c. of a mixture of Extract, 2; Water, 1; and Glycerin, 1.—*B.M.J.* '97, i. 25, 354 and 637; ii. 123; *B.M.J.E.* '96, ii. 88;

'97, ii. 47; *L.* '96, ii. 649 and 1778; *L.* '97, ii. 737; *P.J.* '97, i. 86. Unfavourably commented on, *P.J.* '98, i. 61. In the treatment of inoperable cancer, Celandine is worthy of trial.—*L.* '01, ii. 967; *C.D.* '01, ii. 1048.

**Chelidonine.**—This alkaloid forms colourless crystals, melting at 135° C.; soluble in Alcohol (90 p.c.), insoluble in Water, and but slightly soluble in Ether.

**Dose.**—1 to 3 grains = 0·06 to 0·2 gramme.

The **Sulphate** is readily soluble in Water, the **Hydrochloride** less so, and the **Tannate** is insoluble in Water.

## CHIRATA.

### CHIRETTA.

The entire dried Plant, *Swertia Chirata*, collected when in flower.

It is a native of, and is obtained from, Northern India.

Under the title of **Andrographis**, the dried plant, *Andrographis paniculata*, is Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

**Medicinal Properties.**—Bitter tonic and stomachic; without astringency; given in atonic dyspepsia with acidity.

**Official Preparations.**—Infusum Chiratæ, Liquor Chiratæ Concentratus, and Tinctura Chiratæ.

**Official in Port. and U.S.**

### INFUSUM CHIRATÆ.

Chiretta, cut small, 1; boiling Distilled Water, 20: infuse for fifteen minutes; strain. (1 in 20)

Now 1 in 20 instead of 1 in 40.

**Dose.**—½ to 1 fl. oz. = 14·2 to 28·4 c.c.

A corresponding preparation, Infusum **Andrographidis**, is Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

### LIQUOR CHIRATÆ CONCENTRATUS. CONCENTRATED SOLUTION OF CHIRETTA.

1 of Chiretta, in No. 40 powder, percolated with Alcohol (20 p.c.) to yield 2. (1 in 2)

**Dose.**—½ to 1 fl. dram. = 1·8 to 3·6 c.c.

A corresponding preparation, Liquor **Andrographidis Concentratus**, is Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

### TINCTURA CHIRATÆ.

1 of Chiretta, in No. 40 powder, percolated with Alcohol (60 p.c.) to yield 10. (1 in 10)

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

Prescribed in 5 *minim* doses, with Acids and Tincture of Orange to form an acid tonic mixture.

A corresponding preparation, *Tinctura Andrographidis*, is Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

Official in U.S., 1 in 10.

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## CHLORAL HYDRAS.

CHLORAL HYDRATE.

$\text{CCl}_3 \cdot \text{CH}(\text{OH})_2$ , eq. 164·15.

Transparent, colourless, rhomboidal crystals, having an aromatic penetrating odour, and an unpleasant, slightly bitter, acrid taste.

It should be kept in glass-stoppered bottles in a cool and dark place.

**Solubility.**—4 in 1 of Water, and measures 3 $\frac{1}{4}$ ; 5 in 1 of Alcohol (90 p.c.); 2 in 1 of Ether; 2 in 1 of Glycerin; 1 in 1 of Olive Oil; 1 in 3 of Chloroform; 1 in 10 of Oil of Turpentine (cold), 1 in 5 boiling; 1 in 68 of Carbon Bisulphide.

**Medicinal Properties.**—An excellent hypnotic, producing natural and placid sleep soon after its administration; but in some persons causes considerable mental depression. In acute mania, delirium tremens, in fevers and insomnia from other causes. Given in asthma and whooping-cough, and extreme cases of chorea; efficacious in large doses in sea-sickness. Has been found useful as a spinal depressant and antispasmodic in tetanus, uræmic and puerperal convulsions, and by intravenous injection in Strychnine poisoning. Of great value in labour, as it relieves pain, assists to dilate the os and relax the rigid perinæum, especially in primiparæ, without lessening the expulsive power of the uterus. Has been recommended in nocturnal incontinence of urine. As an anodyne it is inferior to Opium, but forms a good combination with it. It does not set up sickness or dyspepsia and constipation as Opium does. It should not be given in advanced cardiac disease, nor in fatty heart.

It is not suitable for subcutaneous injection, as it is likely to produce local inflammation and abscess.

In concentrated solution, applied locally, it acts as a vesicant.

As a pigmentum with Camphor and sometimes with Cocaine, it is useful for the relief of neuralgia, rheumatism, tooth-ache and chilblains.

Effects from an overdose or repeated overdoses are excitement, convulsions, and delirium, followed by deep coma and quiet sleep from which the patient may never stir; he may however pass to death without any previous convulsions. It lowers temperature, and causes contraction of the pupil.

A case of puerperal eclampsia treated by Chloral Hydrate, Potassium Bromide, and Chloroform inhalation.—*L.* '97, ii. 915.

As a pigment to the interior of the nostrils in acute coryza, 10 grains in 4 drms. Castor Oil.—*Pr.* iv. 517.

Applied spread over the surface of diachylon plaster, the skin having been previously rubbed over with Almond Oil or Vaseline, it acts as a vesicant, superior to Cantharides.—*P.J.* '02, i. 115.

**Dose.**—5 to 20 grains = 0·32 to 1·3 grammes.

*Ph.Ger.* maximum single dose, 3 grammes; maximum daily dose, 6 grammes.

**Prescribing Notes.**—3 oz. will dissolve in 1 fl. oz. of Water, and measure 2 fl. oz. and 5½ fl. drm.; if to this be added 23 minims of Water, every minim will contain a grain of Chloral. This solution is handy for dispensing.

It is usually given in solution, but the objectionable taste is difficult to mask; Chloral Hydrate, 20 grains, Syrup of Orange, 1 fl. drm., Peppermint Water, to 1 fl. oz., make a good draught for those who do not object to Peppermint.

Chloral Hydrate, 4 grains, Liquorice Root, in powder, 1 grain, Gum Acacia, in powder, ½ grain, make a good pill, with a trace of 'Diluted Glucose.'

The addition of 1 grain to the fl. oz. will keep hypodermic solutions otherwise liable to develop fungoid growths.

**Incompatibles.**—When prescribed with Alkalies, Chloroform will be liberated.

**Official Preparation.**—Syrpus Chloral.

**Not Official.**—Liquor Bromo-Chloral Compositus, Chloral Camphoratum, Chloral cum Camphora et Cocaina, Chloral et Phenol, Suppositoria Chloral, Dormiol, and Chloral Tannin.

**Antidotes.**—Stomach tube or emetics; keep up the temperature by hot blankets, hot-water bottles, etc.; injection of a pint of hot strong coffee into rectum; electro-magnetism; inhalations of Amyl Nitrite; in bad cases hypodermic injection  $\frac{1}{25}$  grain of Strychnine Nitrate: artificial respiration.—*Murrell.*

$\frac{1}{20}$  of a grain of Picrotoxin has been found enough for 30 grains of Chloral.—*B.M.J.* '75, i. 506.

**Official** in all the Foreign Pharmacopæias.

### SYRUPUS CHLORAL. SYRUP OF CHLORAL.

Dissolve 800 grains of Chloral Hydrate in 15 fl. drm. of Distilled Water, and add Syrup, q.s., to yield 10 fl. oz.  
(10 grains in 60 minims)

**Dose.**—½ to 2 fl. drm. = 1·8 to 7·1 c.c.

Official in Belg. and Fr., 1 in 20, with Peppermint; Dutch Supp., 1 in 20, with Syrupus Menthae Viridis; Mex., 1 in 20; Port., 1 in 50; Span., 1 in 25; Swiss, 1 in 11.

### Not Official.

**LIQUOR BROMO-CHLORAL COMPOSITUS (B.P.C.).**—Chloral Hydrate, 1600 grains; Tincture of Indian Hemp, 400 minims; Tincture of Orange, 400 minims; Henbane Juice, 1600 minims; Syrup,  $3\frac{3}{4}$  fl. oz.; Fluid Extract of Liquorice,  $\frac{1}{2}$  fl. oz.; Dissolve. Add 1600 grains Potassium Bromide dissolved in 7 fl. oz. Distilled Water, filter, wash with Distilled Water to produce 20 fl. oz. Each fl. dram. contains 10 grains of Chloral Hydrate and 10 grains Potassium Bromide.

Dose.— $\frac{1}{2}$  to 2 fl. dram. = 1·8 to 7·1 c.c.

Bromidia is somewhat similar in composition.

It has been suggested that each fl. dram. should be made to contain 15 grains each of Chloral and Potassium Bromide, and that the filtration should be omitted, since it takes out the resins of the Indian Hemp. Suspension by mucilage recommended. Hyoscine Hydrobromate recommended to be substituted for Henbane.—P.J. '02, ii. 147; C.D. '02, ii. 314.

**SUPPOSITORIA CHLORAL.**—Chloral Hydrate, 5 grains; White Wax, 5 grains; Oil of Theobroma, 7 grains. Melt together the Wax and Theobroma Oil, and when partially cooled, mix in the Chloral Hydrate and pour into a mould.

**CHLORAL CAMPHORATUM (B.P.C.).**—Chloral Hydrate 1, Camphor 1: rub together in a warm mortar until completely liquefied, and filter if necessary.

As a Pigmentum this formula has appeared for many years in the Pharmacopœias of the London, Throat and Westminster Hospitals.

Useful application for the relief of neuralgia.

**CHLORAL CUM CAMPHORA ET COCAINA.**—Chloral Hydrate 5, Camphor 5, Cocaine 1.

For the relief of toothache from dental caries, applied on cotton wool.—B.M.J. '86, ii. 131.

**CHLORAL ET PHENOL.**—Chloral Hydrate 1, Carbolic Acid 1. Is soluble in Water, Alcohol (90 p.c.), and in Glycerin.

So long as the proportion of Carbolic Acid to Chloral does not exceed 1·7 to 1, the product will mix with Water in all proportions; beyond this limit the excess of Carbolic Acid separates on the addition of Water. As it corresponds to 3 molecular weights to 1, there is probably a chemical combination in these proportions.—P.J. (3) xvi. 188.

**DORMIOL** (Amylene Chloral).—A colourless liquid possessing a camphoraceous odour; usually supplied commercially as a 50 p.c. solution which mixes readily with water. It is also supplied in capsules containing 0·5 gramme.

A good narcotic in mental diseases, and stated to produce no untoward effects.—*L.* '99, ii. 73; '02, i. 1712; *B.M.J.* '02, i. 1278; *P.J.* '03, i. 62.

**Dose.**—5 to 20 minims = 0·3 to 1·2 c.c.

**Prescribing Notes.**—It can be given in capsules, or in mixtures covering the unpleasant taste with Syrup of Tolu, using equal parts of this syrup and Water.

**CHLORAL TANNIN** (Capitol).—A brown, resinous substance, soluble in Water and in Alcohol.—*P.J.* '99, ii. 148.

A solution has been introduced as a Hair Wash.

### Not Official.

#### CHLORALAMIDUM.

Chloralamide is a compound of Chloral Anhydride and Formamide. In colourless crystals. Its aqueous solution should not be heated above 120° F. It is permanent in weakly acidulated solutions, but decomposed by alkalis.

**Solubility.**—1 in 21 of Water; 1 in 2 of Alcohol (90 p.c.).

Published solubilities of it in Water have varied considerably. The Companion figure (1890) as above, has been confirmed (*P.J.* (3) xxii. 805) with the additional note that below 60° F. the solubility decreases very rapidly.—*C.D.* '92, i. 445.

**Medicinal Properties.**—Hypnotic. It is stated to have much less influence on the heart than Chloral, and therefore may be used in cardiac disease, and that the dose need not be increased after continued use.

Given in all kinds of insomnia.—*L.* '89, ii. 849, 1192; '90, i. 339; *B.M.J.* '89, ii. 1326; '91, i. 1060; *M.P.* '89, ii. 571; *P.J.* (3) xxi. 104; *T.G.* '91, 634, 757; *Pr.* xlvii. 274. In insomnia with 'irregular' heart after influenza.—*B.M.J.* '94, ii. 1045.

The safest of the hypnotics for the insomnia of patients suffering from cardiac disease.—*B.M.J.* '97, ii. 857. Chloralamide is safer but slower in action than Chloral Hydrate.—*L.* '99, ii. 143. 20 to 30 grains in a little spirit, useful as a sleeping draught for patients suffering from acute Bright's disease.—*Pr.* lxvii. 645, 658.

Prescribed with Potassium Bromide as a remedy for seasickness.—*Pr.* lvi. 145.

**Dose.**—20 to 50 grains = 1·3 to 3·24 grammes.

*Ph.Ger.* maximum single dose, 4 grammes; maximum daily dose, 8 grammes.

**Prescribing Notes.**—It should not be prescribed with Alkalies, nor be treated with boiling Water.

**Official in Dutch Supp., Formamidas Chlorali; Ger., Chlor-alum formamidatum; Mex., Cloralamido.**

**MISTURA CHLORALAMIDI.**—Chloralamide, 4 drm.; Powdered Sugar, 1 oz.; Alcohol (60 p.c.) to make 4½ fl. oz.

Dose.—3 to 6 fl. dram. = 10·8 to 21·6 c.c., to be taken with Water.

**HAUSTUS CHLORALAMIDI.**—Chloralamide, 30 grains; Mucilage Mixture, to 1 oz.—*Guy's.*

**CHLOROBROM.**—A preparation containing 30 grains of Chloralamide and 30 grains of Potassium Bromide in each fl. oz.

Dose,  $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 c.c. Has been recommended as a preventive in sea-sickness; also in persistent vomiting not arising from sea-sickness, and in gastric ulcer.—*L.* '92, i. 518; '93, ii. 88, 367, 1564; '94, i. 1001; '95, i. 91. In insomnia and delirium tremens.—*L.* '93, ii. 1486; '95, i. 1307.

### Not Official.

#### CHLORALOSE.

##### ANHYDRO-GLUCO-CHLORAL.

A white, crystalline powder, melting at 187° C. Soluble in Alcohol (90 p.c.), but only slightly so in Water.

**Medicinal Properties.**—Hypnotic and sedative, but dose requires to be watched. Best adapted to cases of simple insomnia. Condemned as a hypnotic for general use, as patients rapidly become habituated to the drug, which then ceases to be effective. Found useful in doses of from 4 to 8 grains in cases of epilepsy complicated by insomnia.—*B.M.J.E.* '95, i. 104.

As small a dose as 4 grains has been found to produce alarming intoxication in a tuberculous patient.—*P.J.* (3) xxv. 1139.

In the insomnia and night sweats of phthisis.—*B.M.J.E.* '94, ii. 51; *T.G.* '95, 93; in the insomnia of asylum patients.—*B.M.J.E.* '93, ii. 75, 91; '94, i. 39; ii. 60.

Poisonous effects with large doses.—*Y.B.T.* '95, 83; *Pr.* lii. 98; *B.M.J.E.* '94, ii. 52.

2 to 10 grains in mental affections.—*B.M.J.E.* '01, ii. 87.

Its toxicity is greater than that of Chloral Hydrate.—*L.* '99, ii. 71.

Case of poisoning from 8 grains of Chloralose: loss of consciousness for six hours: recovery.—*L.* '00, ii. '03.

**Dose.**—3 to 10 grains = 0·2 to 0·65 grammes, given in **cachet**.

### Not Official.

#### CHLORETONE.

##### TRI-CHLOR-BUTYL-ALCOHOL.

Obtained by the interaction of Chloroform, Acetone, and an Alkali.

Light, white, glistening crystals, having a strong camphor-

aceous odour and taste. Soluble 1 in 125 of Water; 6 in 4 of Alcohol (90 p.c.); also soluble in Chloroform and Ether.

Introduced as a hypnotic and local anaesthetic. It is also stated to possess slight analgesic and antiseptic properties.—*T.G.* xxiv. 18, 98; *L.* '00, i. 106.

In epilepsy.—*T.G.* '01, 757.

As a hypnotic in 25 cases of mental disease, 1 to 1½ grammes doses. In restless subjects, 2 grammes may be given.—*B.M.J.E.* '02, i. 31.

To prevent post-operative vomiting.—*P.J.* '03, i. 340.

5-grain doses every three hours to prevent sea-sickness.—*L.* '03, i. 615, 687; *C.D.* '03, i. 424.

**Dose.**—5 to 20 grains = 0·32 to 1·3 grammes.

**Prescribing Notes.**—Conveniently given in cachets or compressed tablets, or dissolved in a mixture of Alcohol and Glycerin. It is suspended with difficulty by Mucilage of Gum Acacia or Tragacanth.

**Chloretone Elixir.**—Chloretone, 10 grains; Spirit of Peppermint, 10 minims; Compound Tincture of Cardamoms, 1 fl. dram.; Glycerin *q.s.* to make 2 fl. dram.; dilute immediately before use with 1 fl. oz. of Water for a dose.

### Not Official.

#### CHLORI LIQUOR.

##### SOLUTION OF CHLORINE.

It is now transferred to the Appendix, B.P. 1898.

A yellowish-green liquid, smelling strongly of Chlorine.

**Medicinal Properties.**—Deodorizer, antiseptic, and disinfectant. When diluted it is used as a **gargle** in small-pox, scarlatina, diphtheria, and putrid sore throat, and as a **wash** for ulcers, cancerous sores, buboes, and large abscesses. In India it has been given for biliary obstructions in conjunction with the Nitro-hydrochloric Acid baths.

Strongly advocated by Burney Yeo in the treatment of enteric fever. The solution he uses is obtained by pouring strong Hydrochloric Acid over Potassium Chlorate, thus: into a 12 oz. bottle put 30 grains powdered Potassium Chlorate, and pour on it 1 fl. dram. strong Hydrochloric Acid, cork, shake, and allow gas to generate, then add Water little by little till bottle is filled. He says it gives much better results and is more pleasant to take than the Liquor Chlori of the B.P. '85. To 12 fl. oz. of this solution he adds 24 to 36 grains of Quinine and 1 fl. oz. of Syrup of Orange peel; he gives 1 fl. oz. of this mixture every two, three, or four hours, according to the severity of the case. It is prescribed as **Mistura Chlori c. Quinina** (*Burney Yeo*).

**Dose.**—10 to 20 minims = 0·6 to 1·2 c.c., in a wineglassful of Water,

**Incompatibles.**—Salts of Lead and Silver.

**Antidotes.**—In case of poisoning by Chlorine Water, the antidotes are White of Egg, Milk, Flour.

**Official in Austr. and Belg.,** Aqua Chlori, 0·32 p.c. of Chlorine; Hung., Jap., Russ. and U.S., 0·4 p.c.; Ger., Aqua Chlorata, 0·5 p.c.; Fr., Chlore Dissous, 0·68 p.c.; Dutch, Solutio Chlori, 0·390 p.c.; Swiss, Chlorum Solutum, 0·4 to 0·6 p.c.; Port., Soluto de Cloro; Span., Solucion de Cloro.

**LIQUOR CHLORI.**—Potassium Chlorate, 50 grains; Hydrochloric Acid, 100 minims; Water, to 1 pint. Add the Acid to the Chlorate in a large bottle; when the Chlorine given off has displaced the air, add the Water gradually, corking and shaking the bottle after each addition.—*St. Bartholomew's.*

The solution recommended (*B.M.J.* '93, i. 1004) for the preparation of 'Euchlorine' solution for use as a gargle in diphtheria, contains an excess of Potassium Chlorate, and practically no free Acid.

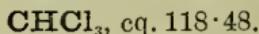
These ingredients, in varying quantities, are given in other Hospital Pharmacopœias.

A Chlorine solution strongly recommended for irrigation of the fauces in diphtheria, is made by pouring 5 minims of strong Hydrochloric Acid on 9 grains of powdered Potassium Chlorate, and gradually adding an ounce of Water.—*L.* '03, ii. 1774.

**Sodium Chlorate** is a tasteless salt, and answers equally well for the formation of 'Euchlorine.'

## CHLOROFORMUM.

### CHLOROFORM.



A clear, colourless, heavy, mobile liquid, possessing a characteristic ethereal odour, and a sweet burning taste.

The quantity of Alcohol is not now defined, except that the product is worked to sp. gr. 1·490 to 1·495.

**Solubility.**—10 in 7 of Alcohol (90 p.c.); in all proportions of Ether and Alcohol; freely in Olive Oil and Oil of Turpentine. In Water at 32° F. 1 in 150, at 60° F. 1 in 185, at 86° F. 1 in 210, at 113° F. 1 in 200, at 130° F. 1 in 192. Will not dissolve in Glycerin.

Chloroform acts on Vulcanite, and dissolves Caoutchouc, Gutta-percha, Mastic, Elemi, Tolu, Benzoin and Copal. Amber, Sandarach, Lac and Beeswax are only partially soluble. It also dissolves Iodine, Bromine, most of the Alkaloids, the fixed and volatile Oils, most Resins and Fats. It dissolves Sulphur and Phosphorus sparingly.

**Medicinal Properties.**—A general anæsthetic. Inter-

nally a sedative, carminative and antispasmodic. Its chief use is to produce general anaesthesia by inhalation during surgical operations, uræmic and puerperal convulsions and in obstetric practice. Should be given with great caution in cases of fatty and of dilated heart, in extensive lung disease and severe anaemia. Internally, useful to relieve flatulent distension of stomach and bowels, and the cough of fibroid phthisis; in delirium tremens, and in sickness. Externally, with Camphor, relieves toothache and neuralgia. Applied immediately after the sting of a wasp, takes away the pain. A powerful auxiliary to the Liniments of Aconite and Belladonna.

Its vapour and aqueous solution are antiseptic, and the addition of 1 minim to 1 fl. oz. of animal or vegetable infusion will preserve it.

Vinegar after Chloroform inhalation to prevent sickness. See p. 6.

Chloroform should not be used as an anaesthetic in a room where Gas is being burned; a mixture of Chloroform vapour and air being decomposed by a flame with the formation of irritating compounds.—*L.* '99, i. 1728; *T.G.* '99, 601; *P.J.* '02, i. 376.

The dosage of Chloroform for inhalation. A powerful and dangerous anaesthetic, not to be recommended in minor surgery. The notorious uncertainty and danger in the Chloroform administration is an uncertainty in the quantity administered. 0·2 c.c. per minute recommended, in a mixture of Chloroform and air at an average percentage of 1·5 p.c.—*B.M.J.* '98, i. 1057-1062.

Less Chloroform is required when preceded by Morphine-Scopolamine injections. (See p. 359.)

Report of the Special Chloroform Committee of the British Medical Association.—*B.M.J.* '03, ii. cxli.

**Dose.**—1 to 5 minims = 0·06 to 0·3 c.c.

*Ph.Ger.* maximum single dose, 0·5 grammes; maximum daily dose, 1·5 grammes.

**Prescribing Notes.**—*Chloroform Water and Spirit of Chloroform are used as sweetening agents, and to preserve solutions from decomposition. As a rule in 'mixtures' Chloroform is in such small quantities as to dissolve in the Water; in concentrated 'mixtures' Mucilage of Gum Acacia would be required to suspend it; it can be given in 'drops' dissolved in some strongly alcoholic menstruum.*

*It mixes readily with Camphor Liniment, Soap Liniment, Olive Oil, or Oil of Turpentine.*

**Official Preparations.**—Aqua Chloroformi, Linimentum Chloroformi, Spiritus Chloroformi, Tinctura Chloroformi et Morphinæ Composita.

**Not Official.**—Liquor Chloroformi Compositus, Mistura Chloroformi et Cannabis Indicæ Composita, Tinctura Chloroformi Composita, Chloroformum Camphoratum, Carbon Tetrachloride, A.C.E. Mixture, Vienna Mixture, 'Methylene,' Regnauld's Anaesthetic Mixture, Pental.

**Antidotes.**—In case of overdose of Chloroform, the antidotes are, fresh pure air and artificial respiration (*M.T.* '74, ii. 219), and Amyl Nitrite (*L.* '75, i. 644; *B.M.J.* '97, ii. 352). Hypodermic injection of Strychnine, altogether  $\frac{1}{2}$  grain was used in this case in divided doses of  $\frac{1}{8}$  grain followed by  $\frac{1}{12}$  grain.—*B.M.J.* '97, ii. 1498.

**Official in all the Foreign Pharmacopœias.**

#### AQUA CHLOROFORMI. CHLOROFORM WATER.

Chloroform, 30 minims; Distilled Water, *q.s.* to make 25 fl. oz. (1 in 400)

Half the strength of B.P. 1885.

**Dose.**— $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 c.c.; but ordered in smaller quantities as a flavouring agent.

**Official in Dan., Norw. and U.S. (1 in 200); Dutch Supp. (1 in 500); Ital. (1 in 2000).**

#### LINIMENTUM CHLOROFORMI. LINIMENT OF CHLOROFORM.

Chloroform, 1; Liniment of Camphor, 1. (1 in 2)

The Oil in the Camphor Liniment prevents rapid evaporation of the Chloroform.

**Official in Dutch Supp., Chloroform 1, Olive Oil 2; Fr., Chloroform 1, Almond Oil 9; Span., Chloroform 1, Compound Oil of Stramonium 9; Ger. and Swiss (*Oleum Chloroformi*), Chloroform 1, Olive Oil 1; Swed. (*Linimentum Chloroformi Comp.*), Chloroform 3, Camphor 3, Alcohol (90 p.c.) 5, Camphorated Soap Liniment 6, Tincture of Opium 3. All by weight. U.S., Chloroform 3, Soap Liniment 7.**

#### SPIRITUS CHLOROFORMI. SPIRIT OF CHLOROFORM. *B.P. Syn.*—CHLORIC ETHER; SPIRIT OF CHLORIC ETHER.

Chloroform, 1; Alcohol (90 p.c.), *q.s.* to make 20.

**Dose.**—5 to 20 minims = 0·3 to 1·2 c.c., for repeated administration; for a single administration, 30 to 40 minims = 1·8 to 2·4 c.c.

Frequently prescribed as a sweetening agent, and to cover nauseous flavours.

**Official in Jap., 1 in 20; U.S., Chloroform 6, Alcohol 94.**

#### TINCTURA CHLOROFORMI ET MORPHINÆ COMPOSITA, COMPOUND TINCTURE OF CHLOROFORM AND MORPHINE.

Chloroform,  $1\frac{1}{2}$  fl. oz.; Morphine Hydrochloride,  $87\frac{1}{2}$  grains; Diluted Hydrocyanic Acid, 1 fl. oz.; Tincture of Capsicum,  $\frac{1}{2}$  fl. oz.; Tincture of Indian Hemp, 2 fl. oz.; Oil of Peppermint, 14 minims; Glycerin, 5 fl. oz.; Alcohol (90 p.c.), q.s. to make 20 fl. oz. (about 1 in 13)

**Dose.**—5 to 15 minims = 0·3 to 0·9 c.c.

10 minims contain Chloroform  $\frac{3}{4}$  minim, Morphine Hydrochloride,  $\frac{1}{11}$  grain, Diluted Hydrocyanic Acid  $\frac{1}{2}$  minim, Tincture of Indian Hemp 1 minim.

It is nearly  $4\frac{1}{2}$  times stronger in Morphine than B.P. 1885, and in other respects differs considerably.

The B.P. 1885 preparation was practically the same as Liquor Chloroformi Compositus (*Squire*), except that the former contained four times as much Morphine as the latter. In B.P. 1898 the formula was completely changed, therefore Liquor Chloroformi Compositus, previously omitted in *Companion*, is re-inserted.

**Official** in Dutch Supp., similar to B.P.; Hung. has a 'Chlorodyne,' but it differs considerably from B.P.

### Not Official.

**LIQUOR CHLOROFORMI COMPOSITUS** (*Squire*).—Chloroform, 4 fl. oz.; Ether, 1 fl. oz.; Alcohol (90 p.c.), 4 fl. oz.; Treacle, 4 fl. oz.; Extract of Liquorice,  $2\frac{1}{4}$  oz.; Morphine Hydrochloride, 8 grains; Oil of Peppermint, 16 minims; Syrup,  $17\frac{1}{2}$  fl. oz.; Prussic Acid (2 p.c.), 2 fl. oz. Mix the Oil of Peppermint, Alcohol and Prussic Acid together, and dissolve the Morphine Hydrochloride in the mixture; add the Chloroform and Ether; dissolve the Extract of Liquorice in the Syrup, add the Treacle, and mix in the other ingredients.

This formula first appeared in the *Companion* in 1864.

**Dose.**—5 to 10 minims = 0·3 to 0·6 c.c.

10 minims contain Chloroform about 1 minim, Diluted Hydrocyanic Acid  $\frac{1}{2}$  minim, Morphine Hydrochloride  $\frac{1}{200}$  grain.

**MISTURA CHLOROFORMI ET CANNABIS INDICÆ COMPOSITA** (*U.S.N.F.*).—Chloroform, 125; Ether, 35; Tincture of Indian Hemp, 125; Tincture of Capsicum, 65; Morphine Sulphate, 2·5; Oil of Peppermint, 2; Glycerin, 125; Water, 125; Alcohol (94 p.c.), to produce 1000.

**TINCTURA CHLOROFORMI COMPOSITA** (*B.P.C.*).—Chloroform, 2; Alcohol (90 p.c.), 8; Compound Tincture of Cardamoms, 10; mix. (1 in 10)

It first appeared in B.P. 1885, but was omitted in 1898.

**Dose.**—5 to 60 minims = 0·3 to 3·6 c.c.

The Chloroform will separate if this Tincture is prescribed in too little Water.

Has been given successfully for the prevention of sea-sickness.

**CHLOROFORMUM CAMPHORATUM (B.P.C.).**—Camphor, 2; Chloroform 1; dissolve.

A remedy for toothache, and topically applied for rheumatism.

**CARBON TETRACHLORIDE.**—A colourless, volatile, heavy liquid, sp. gr. 1·590 to 1·600. Has been employed to produce anaesthesia; but its principal use is as an inhalation in hay fever, and as an application on piline for neuralgia.

**A.C.E. MIXTURE.**—Alcohol (90 p.c.), 1; Chloroform, 2; Ether, 3; mix.

Used as an anaesthetic in place of Chloroform.—*Med. Chir. Trans.* vol. 47, '64, 341; *B.M.J.* '87, ii. 975, 1078, 1185, 1314, 1359.

**VIENNA MIXTURE.**—Ether, 3; Chloroform, 1; by weight.—*P.J.* (3) xii. 703.

'**METHYLENE**' (formerly called Methylene Bichloride).—Introduced by B. W. Richardson in November, 1867. It is a limpid, dense fluid, sp. gr. varies; when dropped into Water about one-fourth of it is dissolved, the remainder separates like Chloroform at the bottom of the vessel as a perfectly clear and distinct fluid, and the whole has a sweet, pleasant odour, without the least smell of Ether.

Recommended as an anaesthetic in place of Chloroform.—*B.M.J.* '88, i. 1211, 1301; '88, ii. 72, 203.

**REGNAULD'S ANÆSTHETIC MIXTURE.**—Chloroform, 4; Methylic Alcohol, 1; mix.

Used as an anaesthetic in the place of Chloroform.—*B.M.J.* '83, ii. 106; '84, i. 452.

**PENTAL** (Trimethylethylene).—A colourless, mobile, inflammable liquid. Has been recommended as a general anaesthetic for short operations. Whitla states that several deaths have been attributed to it, and that it causes albuminuria.—*M.A.* '95, 40; *L.* '94, i. 1080; '96, i. 45, 710, 950; *T.G.* '93, 34; '94, 555; *B.M.J.E.* '93, ii. 28; *B.M.J.* '96, i. 730.

## CHRYSAROBINUM.

### CHRYSAROBIN.

An odourless and tasteless, yellow, crystalline powder, obtained from Araroba.

Purified Chrysarobin was introduced into medicine incorrectly as **Chrysophanic Acid**, and it is still known by this name, which, however, only correctly applies to the oxidised product.

Araroba yields from 55 to 80 p.c. (average 71 p.c.) of Chrysarobin.—*P.J.* (3), xxii. 544.

**Medicinal Properties.**—In form of unguentum or pigmentum, it has been found efficient in chronic psoriasis, and is a powerful parasiticide in ringworm and other parasitic skin diseases, but as it may cause erythema it requires

watching; it should not be allowed to touch the healthy skin. It stains the skin yellow, also the linen. Has been given internally for psoriasis, eczema and acne; but it is very irritating, producing purging, griping and vomiting even in very small doses.

Alopecia areata, treated almost exclusively with Chrysarobin sticks—Chrysarobiu, 30; Colophony Resin, 5; Yellow Wax, 35; Olive Oil (by weight), 30.—*B.M.J.E.* '95, ii. 103; *P.J.* '96, i. 139.

Chrysophanic Acid is not an efficient substitute for Chrysarobin in the treatment of psoriasis.—*B.M.J.E.* '96, ii. 96.

**Dose.**— $\frac{1}{10}$  to 1 grain = 0·006 to 0·06 gramme.

**Official Preparation.**—Unguentum Chrysarobini.

**Not Official.**—Unguentum Acidi Chrysophanici, Unguentum Chrysarobini Compositum, Pigmentum Chrysarobini, Chrysarobiu Plaster Mulls, Anthrarobin.

**Official in Austr., Araroba Depurata;** Dau., Dutch, Ger., Ital., Jap., Norw., Russ., Swed., Swiss and U.S., Chrysarobium; Mex., Crisarobina, the purified product.

### UNGUENTUM CHRY SAROBINI.      CHRYSAROBIN OINTMENT.

2 of Chrysarobin dissolved in 48 of Benzoated Lard by the aid of heat, and subsequently stirred till cold.      (1 in 25)

**Official in U.S.**, 1 in 20.

**Not Official.**

**UNGUENTUM ACIDI CHRY SOPHANICI.**—Purified Chrysarobin, 120 grains; Lard, 1 oz.; heat together on a water-bath for half an hour, constantly stirring; when set, mix with a pestle and mortar.—*British Skin.*

**UNGUENTUM CHRY SAROBINI COMPOSITUM (Unna).**—Chrysarobin and Ichthyol, of each, 5; Salicylic Acid, 2; Yellow Vaseline, 88.

**PIGMENTUM CHRY SAROBINI.**—Chrysarobin, 1; Gutta Percha solution, 9.—*Guy's.*

Chrysarobin, 60 grains; Chloroform, 10 drm.; pure Gutta Percha, 60 grains; dissolve. Painted on with a stiff brush. Acts effectually, and does not stain the linen.—*B.M.J.* '87, ii. 1139.

A 5 to 10 p.c. solution of Chrysarobiu in equal parts of Chloroform and Glycerin. Used in ringworm; applied till erythema and a slight œdema are produced.—*B.M.J.* '04, i. 16.

**CHRYSAROBIN PLASTER MULLS (Unna).**—Contain  $\frac{1}{10}$  grain to the square inch; also five times this strength.

**ANTHRAROBIN.**—A yellow, or light yellowish-brown, odourless, tasteless powder. A reduction product from Alizarin. Slightly soluble in Water, but readily in Alcohol (90 p.c.) and solution of Borax. A substitute for Chrysarobin. For an ointment it is rubbed with Olive Oil and diluted with Lard.

Its action is similar to Chrysarobin, but it is slower and does not produce the same irritation. The part should be previously washed with Potash Soap, and the alcoholic **tincture** is preferred to the ointment. The strength of the ointment used is 1 in 10. —*B.M.J.* '88, i. 1234; *L.M.R.* '88, 234, and '89, 243.

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## CIMICIFUGÆ RHIZOMA.

CIMICIFUGA.

*B.P.Syn.*—ACTÆÆ RACEMOSÆ RADIX.

The dried Rhizome and Roots of *Cimicifuga racemosa*.

**Medicinal Properties.**—Bitter stomachic, analgesic, expectorant. Given in neuralgia, myositis, rheumatism, lumbago, and sciatica. Relieves the pain of dysmenorrhœa and pleurodynia.

**Official Preparations.**—Extractum Cimicifugæ Liquidum, and Tinctura Cimicifugæ.

**Not Official.**—Cimicifugin.

**Official in U.S.**

**EXTRACTUM CIMICIFUGÆ LIQUIDUM.** LIQUID EXTRACT OF CIMICIFUGA. *B.P.Syn.*—LIQUID EXTRACT OF ACTÆA RACEMOSA.

20 of Cimicifuga percolated with Alcohol (90 p.c.) until exhausted, reserving the first 15, and evaporation of the further portion to a soft extract which is dissolved in the 15, and the whole made up to 20 with Alcohol (90 p.c.). (1 in 1)

**Dose.**—5 to 30 minims = 0·3 to 1·8 c.c.

**Official in U.S.**; also a solid **extract**.

**TINCTURA CIMICIFUGÆ.** TINCTURE OF CIMICIFUGA. *B.P.Syn.*—TINCTURE OF ACTÆA RACEMOSA.

2 of Cimicifuga, in No. 40 powder, percolated with Alcohol (60 p.c.), to yield 20. (1 in 10)

**Dose.**—30 to 60 minims = 1·8 to 3·6 c.c.

The Tincture formerly in the *Companion* as 'Not Official' was twice the strength of this, and is still ordered as **Tinctura Actææ Racemosæ (Squire)** to distinguish it from the Official preparation.

**Official in U.S.**, 1 in 5.

**Not Official.**

**CIMICIFUGIN.**—A brown powder, a large proportion of which is soluble in Alcohol (90 p.c.).

**Dose.**—1 to 5 grains = 0·06 to 0·32 grammes.

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Not Official.

## CINCHONÆ CORTEX.

### CINCHONA BARK.

The dried Bark of *Cinchona Calisaya*, *C. officinalis*, *C. lancifolia*, and other species of *Cinchona*, from which the various alkaloids of the bark may be obtained.

The Official salts of Quinine, which are Quininæ Hydrochloridum, Quininæ Hydrochloridum Acidum, and Quininæ Sulphas, may be prepared from the Bark of various species of Cinchona and Remijia.

Only Red Cinchona Bark is Official for the Galenical preparations.

**Official in Austr., Dan., Jap., Norw., Russ. and Swed.,** any species, especially Succirubra; Belg. and Dutch Supp., China Flava, China Fusca, China Rubra; Ger., Cinchona Succirubra; Fr. (Quinquina) and Mex., any species; Hung., China Calisaya and Succirubra; Port., Cinchona Flava, Fusca and Rubra; Span., Cinchona Calisaya, Peruviana and Succirubra; Swiss and Ital., Cinchona Succirubra, Ledgeriana and Calisaya; U.S., any species of Cinchona, especially Calisaya, Officinalis, and Succirubra; the latter used for Compound Tincture only.

## CINCHONÆ RUBRÆ CORTEX.

### RED CINCHONA BARK.

The dried Bark of the stem and branches of cultivated plants of *Cinchona succirubra*.

**Medicinal Properties.**—Tonic, bitter, stomachic and astringent. It is a valuable remedy in neuralgia and tic dououreux, and in convalescence from acute diseases; in diarrhoea, excessive perspiration, chronic discharges from mucous membranes, and in dipsomania; used as a dusting powder for foul ulcers and moist eczema. (*See also Quinine.*)

An almost white powder was sold in India as the Government Cinchona Febrifuge, which had an average percentage composition of 15·5 crystallisable Quinine, 33·5 Cinchonine, 29 Cinchonidine, 17 Amorphous Alkaloid, 5 colouring matter.

It has been suggested to mix the crystalline salts in the proportion of 4 parts of Quinine Sulphate, 8 parts of Cinchonidine Sulphate, 9 parts of Cinchonine Sulphate.

**Official Preparations.**—Extractum Cinchonæ Liquidum, Infusum Cinchonæ Acidum, Tinctura Cinchonæ, Tinctura Cinchonæ Composita; and is a source of the Alkaloid Quinine.

**Not Official.**—Decoctum Cinchonæ, Elixir Cinchonæ, Vinum Chinæ, Cinchonidinæ Hydrobromidum, Cinchonidinæ Sulphas,

Cinchoninæ Iodo-Sulphas, Cinchoninæ Sulphas, and Acidum Chinicum.

**Official in Austr., Belg., Dan., Dutch Supp., Fr., Ger., Hung., Ital., Jap., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

**EXTRACTUM CINCHONÆ LIQUIDUM. LIQUID EXTRACT OF CINCHONA.**

Prepared from Red Cinchona Bark by treatment with Distilled Water acidulated with Hydrochloric Acid containing a small proportion of Glycerin; standardised to contain 5 grammes of Alkaloids in 100 c.c.

**Dose.**—5 to 15 minims = 0·3 to 0·9 c.c.

22 minims contain 1 grain of alkaloids.

**Official in** Dan., Dutch Supp., Jap., Mex., Norw., Swed., Swiss and U.S., 1 in 1; **Solid Extracts.**—Austr. Add. and Hung., Aqueous; Dutch, Ital., Mex., Russ., Span. and Swiss, Alcoholic; Belg., Ger., Mex. and Port., both Aqueous and Alcoholic. Austr. Add. has an aqueous extract in powder, **Extractum Chinæ.**

A solid extract prepared from China Fusca is Official in Dutch Supp.; also one prepared in the cold.

**INFUSUM CINCHONÆ ACIDUM. ACID INFUSION OF CINCHONA.**

Red Cinchona Bark, 1; Aromatic Sulphuric Acid,  $\frac{1}{4}$ ; Distilled Water, boiling, 20; infuse for one hour, and strain.

(1 in 20)

**Dose.**— $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 c.c.

**Official in** U.S. (C. any species not Red), 6 in 100, with Aromatic Sulphuric Acid; Russ. (C. Rubra), 1 in 8, with Phosphoric Acid; Fr. (Tisane), 1 in 50; Span., 1 in 46, without acid.

**TINCTURA CINCHONÆ. TINCTURE OF CINCHONA.**

Red Cinchona Bark treated with Alcohol (70 p.c.) *q.s.*, and standardised to contain 1 gramme of alkaloids in 100 c.c.

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

22 minims contain  $\frac{1}{5}$  grain of alkaloids.

**Official in** Belg., Tinctura Chinæ, Tinct. Chinæ Flavæ, Tiuct. Chinæ Rubræ; Dutch, Tinctura Chinæ Rubræ; Dutch Supp., Tinctura Chinæ Fuscæ; Fr., Teiuture de Quinquina Gris, Jaune, also Rouge; Dan., Norw., Russ. and Swed., Tintura Chinæ (from any species); Ger., Tinctura Chinæ, and Hung., Tinctura Chinæ Simplex (from C. Succirubra); Ital., Tintura di China; Jap., Tinct. Chinæ; Mex., Tintura de Quina; Port., Tintura de Quina (from C. Flava); Span., Tintura Alcoholica de Quina (from C. Calisaya and C. Loja); Swiss, Tinctura Cinchonæ; U.S., Tinctura Cinchona (C. any species not Red); all 1 in 5, and all by weight, except U.S.

**TINCTURA CINCHONÆ COMPOSITA.** COMPOUND  
TINCTURE OF CINCHONA.

Tincture of Cinchona, 20 fl. oz.; Dried Bitter-Orange Peel, well-bruised, 2 oz.; Serpentine Rhizome, in No. 40 powder, 1 oz.; Cochineal, in powder, 56 grains; Saffron, 110 grains; Alcohol (70 p.c.), *q.s.* to yield 40 fl. oz.

Now made with standardised Tincture of Cinchona instead of Red Cinchona Bark. It should contain about 0·5 grammes of alkaloids in 100 c.c.

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

22 minims contain  $\frac{1}{16}$  grain of alkaloids.

**Official** in Span., resembles Brit., but made with Loxa Bark; Austr., Ger., Hung. and Russ., Tinct. Chinæ Comp., also Belg. (Tinct. Whyttii), and Swiss (Tinct. Cinch. Co.), with Cinchona, Gentian, Orange Peel, and Cinnamon (various strengths); Dan., Dutch, Norw., and Swed. (Tinct. Chinæ Comp.), similar to the above, but without Cinnamon; Mex. (Tintura de Quina Composta), Bitter-Orange Peel, Cinchona and Gentian; Port. (Tinct. de Quina Comp.), Cinchona, Orange Peel, and Serpentine; U.S., almost the same, with Glycerin.

**Huxham's Tincture of Bark** (Original Formula in 1788).—Powdered Peruvian Bark, 4 oz.; Orange Peel, 3 oz.; Serpentine Root, 80 grains; Saffron, 160 grains; Cochineal, 80 grains; Brandy, 40 fl. oz.; digest 3 or 4 days.

**Not Official.**

**DECOCTUM CINCHONÆ.**—Red Cinchona Bark, in No. 20 powder, 1 $\frac{1}{2}$ ; Distilled Water, 20; boil ten minutes; when cold, strain, and pour on the marc sufficient Water to make 20. (1 in 16)

**Dose.**—1 to 2 fl. oz. = 28·4 to 56·8 c.c.

**Official** in Belg., China Fusca, 1 in 10, also Flava and Rubra, 1 in 10; Dan., 1 in 8 with Hydrochloric Acid; Dutch, 6 in 100; Ital., 1 in 20; Norw. and Swed., 1 in 10 with Hydrochloric Acid; Port., Cinchona Flava 1 in 10, also Fusca 1 in 10; Russ., Cinchona Rubra, 1 in 7·5, containing Sulphuric Acid; Span., Quina Calisaya 1 in 46, also Quina ex Loja 1 in 46; Dan. and Norw. have a Dec. Chinæ c. Senega.

**ELIXIR CINCHONÆ (U.S.N.F.).**—Tincture of Cinchona, 12; Syrup, 10; Glycerin, 10; Aromatic Elixir, 48. Each fluid ounce represents about 14 grains of Yellow Cinchona. A similar preparation is made with Detannated Tincture of Cinchona for use in combination with preparations of Iron.

**VINUM CHINÆ (Ger.).**—Dissolve Gelatin, 1, in warm Water, 10; mix with Sherry, 1000; add Powdered Cinchona Bark, 40; allow to stand for eight days at 15° to 20° C. Press, and to the expressed liquor add Sugar, 100; Tincture of Orange, 2; allow to stand in a cool place for fourteen days, and filter.

Austr. Add. has a **Vinum Chinæ Ferratum** made with Quinine

and Iron Citrate; Fr. Codex has **Vin de Quinquina** made with Cinchona, 50; Alcohol (60 p.c.), 100, and Red Wine, 1000; Ital., **Vino Chinato**, Cinchona, 1, Marsala Wine, 30.

**CINCHONIDINÆ HYDROBROMIDUM.**—Long, light yellow, odourless, prismatic crystals, possessing a very bitter taste. Soluble in Water. Under the name of 'Blennostasine,' a combination similar to this has been introduced for the treatment of affections characterised by catarrhal hyper-secretion. A basic as well as a neutral salt is Official in Fr. Codex.

**CINCHONIDINÆ SULPHAS** ( $C_{19}H_{22}N_2O_2$ ) $_2$ ,  $H_2SO_4$ ,  $xH_2O$ .—Colourless, odourless, silky, acicular crystals, having a very bitter taste.

**Solubility.**—1 in 100 of Water, 1 in 60 of Alcohol (90 p.c.), sparingly in Chloroform and Ether.

**Dose.**—1 to 10 grains = 0·06 to 0·65 grammes.

Official in Fr. and U.S.

**CINCHONINÆ IODO-SULPHAS** (Antiseptol).—A brown, or reddish-brown, odourless powder, insoluble in Water, soluble in Alcohol (90 p.c.) and in Chloroform. It contains about 50 p.c. of Iodine. Introduced as a substitute for Iodoform. Used in the form of a 1 in 8 ointment for lupus. Has also been given internally in doses of 1 to 5 grains = 0·06 to 0·32 grammes.

**CINCHONINÆ SULPHAS** ( $C_{19}H_{22}N_2O_2$ ) $_2$ ,  $H_2SO_4$ ,  $2H_2O$ .—Hard, white, shining, odourless, prismatic crystals, having a very bitter taste.

**Solubility.**—1 in 70 of Water, 1 in 9 of Alcohol (90 p.c.), 1 in 60 of Chloroform, sparingly in Ether.

**Dose.**—1 to 10 grains = 0·06 to 0·65 grammes.

Official in Dutch, Fr., Mex., Port., Span. and U.S.

**Cinchonidinæ Sulphas Acidus** and **Cinchoninæ Sulphas Acidus** are also known. These salts are more readily soluble in Water.

**Cinchonidinæ Salicylas** and **Sulphocarbolas** have been used in medicine. The former as a tonic and antiperiodic, the latter as an antiseptic and prophylactic against malaria.

**ACIDUM CHINICUM** (Chinic Acid, Kinic Acid, Quinic Acid).—Colourless, transparent, rhombic prisms or flat, crystalline masses, having a strongly acid but not a bitter taste. Soluble in Water, and in Alcohol (90 p.c.). It has been introduced in the treatment of the uric acid diathesis and in gout. It is more generally employed in the form of a salt, e.g. Lithium Quinate, *q.v.* p. 402.

**Dose.**—1 to 5 grains = 0·06 to 0·32 grammes.

## CINNAMOMI CORTEX.

### CINNAMON BARK.

The dried inner Bark of shoots from the truncated stocks of *Cinnamomum Zeylanicum*. The bark from cultivated

trees is alone official. Imported from Ceylon, and commercially known as Ceylon Cinnamon.

**Medicinal Properties.**—Carminative, astringent, aromatic stimulant, and antiseptic, chiefly used as an adjuvant to other medicines. Often employed with Chalk in diarrhoea. An essence has been used as a prophylactic against influenza.

60 grain doses for dysentery.—*B.M.J.* '95, i. 530; *L.* '95, i. 567. Has been lauded for cancer, but the majority of evidence is not in its favour.—*M.A.* '95, 163.

Inhalation of **Oil of Cinnamon** in the treatment of consumption.—*B.M.J.* '96, ii. 1374.

The vapour of the oil of cinnamon exerted no retarding or inhibitive influence on the growth of the tubercle bacillus.—*B.M.J.* '99, i. 203.

**Dose.**—10 to 20 grains = 0·65 to 1·3 grammes in powder.

**Official Preparations.**—Of the **Bark**, *Aqua Cinnamomi*, *Oleum Cinnamomi*, *Pulvis Cinnamomi Compositus*, and *Tinctura Cinnamomi*; used in the preparation of *Decoctum Haematoxyli*, *Pulvis Catechu Compositus*, *Pulvis Cretæ Aromaticus*, *Pulvis Kino Compositus*, *Tinctura Cardamomi Composita*; *Tinctura Catechu*, and *Tinctura Lavandulæ Composita*. Of the **Water**, *Mistura Cretæ*, *Mistura Guaiaci*, *Mistura Olei Ricini*, *Mistura Spiritus Vini Gallici*, *Syrupus Aromaticus* and *Syrupus Cascarae Aromaticus*. Of the **Oil**, *Spiritus Cinnamomi*. Of the **Compound Powder**, *Pilula Aloes et Ferri* and *Pilula Cambogiæ Composita*. Of the **Spirit**, *Acidum Sulphuricum Aromaticum*.

**Official in Belg., Fr. (Cannelle), Ital., Jap., Mex., Norw., Port., and Swed.** use Ceylon Cinnamon only. **Austr., Ger., Hung. and Russ.,** use Chinese Cinnamon or Cassia only. **Dan., Dutch, Span., Swiss and U.S.** use both kinds.

#### **AQUA CINNAMOMI. CINNAMON WATER.**

Cinnamon Bark, bruised, 1; Water, 20; distil 10.

(1 in 10)

The distilled 'Aqua' is very turbid from suspended Oil. There is no recognised rule in dispensing as to whether it should be filtered or not, but it is customary to do so.

**Dose.**—1 to 2 fl. oz. = 28·4 to 56·8 c.c.

**Official in Austr., Belg., Dan., Dutch, Ger., Russ., Swed. and Swiss,** 1 in 10; **Fr. (Eau de Cannelle), Ital. and Mex.,** 1 in 4; **Hung., 1 in 5; Port., 1 in 8; Jap., Norw. and U.S., made with Oil** 1 in 500.

#### **OLEUM CINNAMOMI. OIL OF CINNAMON.**

A light yellow liquid, obtained by distillation from Cinnamon Bark, and possessing the agreeable, delicate, aromatic odour of the Ceylon Cinnamon, and a spicy, sweet, burning taste. It darkens in colour by exposure to light and air.

B.P. requires it to be free from Cinnamon-Leaf Oil, and to contain 50 p.c. of aldehydes. It usually contains 65 to 75 p.c. of Cinnamic Aldehyde. Yield of oil is about 0·5 to 1 p.c.

**Cinnamic Acid**, an oxidised product of the oil, is described under Acidum Cinnamicum, p. 25.

**Solubility.**—10 in 3 of Alcohol (90 p.c.); 1 in 45 of Alcohol (60 p.c.).

Possesses the aromatic and antiseptic properties of Cinnamon Bark, without its astringency.

**Dose.**— $\frac{1}{2}$  to 3 minims = 0·03 to 0·18 c.c.

In pill or on Sugar.

**Official** in Belg., Dutch, Fr., Ital., Jap., Mex.; Port. and Span. use Oil of Cinnamon; Austr., Dan., Ger., Hung., Norw., Swiss and U.S. use Oil of Cassia. Swed., **Cinnamalum** (Cinnamic Aldehyde) in place of Oil of Cassia.

**PULVIS CINNAMOMI COMPOSITUS.** COMPOUND POWDER OF CINNAMON. *B.P. Syn.*—PULVIS AROMATICUS.

Cinnamon Bark, 1; Cardamom Seeds, 1; Ginger, 1, all in powder. (1 in 3)

**Dose.**—10 to 40 grains = 0·65 to 2·6 grammes.

**Official** in Port., Cinnamon 7, Cardamoms 7, Ginger 6; Pulvis Aromaticus—Belg., Dutch, Jap. and Swiss, same as Brit.; U.S., Cinnamon 7, Ginger 7, Cardamoms 3, Nutmeg, 3.

**SPIRITUS CINNAMOMI.** SPIRIT OF CINNAMON.

Oil of Cinnamon, 1; Alcohol (90 p.c.), *q.s.* to yield 10.

Now 1 in 10 in place of 1 in 50.

**Dose.**—5 to 20 minims = 0·3 to 1·2 c.c.

It is five times the strength of B.P. 1885.

**Official** in Belg., 1 in 100; Jap., 1 in 50; U.S., 1 in 10; Dutch, Ital., Mex., Port. and Span. (distilled from the Bark).

**TINCTURA CINNAMOMI.** TINCTURE OF CINNAMON.

1 of Cinnamon Bark, in No. 40 powder, percolated with Alcohol (70 p.c.), to yield 5.

Now 1 in 5 instead of 1 in 8.

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

**Official** in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed. and Swiss, 1 in 5; all by weight; U.S., 1 in 10.

**Tinctura Aromatica** (*Ger.* and *Russ.*).—Cinnamon Root, in coarse powder, 5; Ginger, 2; Galangal Root, 1; Cloves, 1; Cardamoms, 1; Diluted Alcohol, 50.

*Ger.* use 60 p.c., and *Russ.* 70 p.c. Alcohol.

**COCA FOLIA.****COCA LEAVES.**

The dried Leaves of *Erythroxylum Coca*, and its varieties.

Commercially the leaves show two main varieties, the Peruvian or Truxillo and the Bolivian or Huanuco. A third variety from Java and other East Indian countries is used to a considerable extent in Germany, chiefly for the manufacture of Cocaine.

It would appear from investigations on the subject of Coca Leaves and Coca Alkaloids: 1. That the original broad-leaved Bolivian (Huanuco) Coca contains principally Cocaine; 2. That the alkaloid of N. Peruvian or Truxillo Coca is only about one-half Cocaine, a large proportion of the remainder being Cinnamyl-Cocaine; 3. That frequently in Truxillo Coca, and particularly in East Indian (Java), there is another alkaloid around which the controversy still turns. It is called Cocamine by Hesse, and is said to be similar in action to Cocaine, but weaker. Liebermann, however, holds that this Cocamine is the body first called by him Isotropyl-Cocaine and later  $\alpha$ -Truxilline.

As this latter compound interferes with the crystallisation of the Cocaine, and Cinnamyl-Cocaine is readily detected by the Permanganate test, neither of these impurities is likely to be found in a well-crystallised commercial sample.

**Medicinal Properties.**—A nervine and muscular tonic, stimulant and restorative. Useful during convalescence, in debility and nervous exhaustion. It is chewed by the natives of Peru and Bolivia to sustain them during the day, that they may defer eating till the evening; it also prevents fatigue.

It has been recommended for the cure of the craving for Opium and for Alcohol, but the craving for Cocaine, which is acquired by the excessive use of Coca, is possibly worse than either.

**Official Preparations.**—Extractum Cocaæ Liquidum. Used in the preparation of Cocaina and Cocainæ Hydrochloridum.

**Not Official.**—Extractum Cocaæ and Vinum Cocaæ.

**Official in Austr., Belg., Dutch Supp., Fr., Ital., Mex., Port., Span., Swiss and U.S.**

**EXTRACTUM COCAE LIQUIDUM. LIQUID EXTRACT OF COCA.**

Percolate 20 of Coca Leaves in powder with Alcohol (60 p.c.) until the drug is exhausted. Reserve the first 15 of percolate and evaporate remainder at a temperature below 80° C. to a soft extract, which dissolve in the reserved portion, and add Alcohol (60 p.c.), q.s. to yield 20. (1 in 1)

**NOTE.**—As the Coca Leaves would be but imperfectly exhausted

by the first 15 parts of the Alcohol, and as the active constituents are greatly damaged or destroyed by heat, a fluid extract prepared by repercolation is much to be preferred. When thus prepared from carefully dried green leaves, it contains 25 p.c. of solid Extract (dried at 212° F.).

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

**Official in U.S.**, same as Brit.; Dutch Supp. and Mex.

Belg. has solid Extract; Fr. Codex has solid Extract, Tincture 1 in 5, and Tisane 1 in 100; Ital. has solid Extract, and Tincture 1 in 5; Swiss has Tincture 1 in 5.

A 'miscible' liquid extract of Coca, for adding to wine, can be made by percolating the leaves with a weak Alcohol and subsequent addition of Glycerin.

#### Not Official.

**EXTRACTUM COCÆ.**—A solid alcoholic green extract, prepared from carefully dried leaves.

**Dose.**—2 to 10 grains = 0·13 to 0·65 grammes, in pills, pastils, or lozenges.

**VINUM COCÆ.** *Syn.*—**VIN DE COCA (Fr.)**.—Dried Leaves of Coca 6, Vin de Grenache or Vin Rouge 100; macerate for 6 days, and filter.

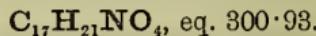
Wine of Coca can also be made by adding an equivalent quantity of the Liquid Extract to Wine.

Coca Wine, if sufficiently weak to be used as a beverage, requires a wine licence. The Excise has drawn the line at Wines containing  $\frac{1}{2}$  grain of alkaloid to the oz., which would be at least twice as strong as the above.

**Official in Belg. and Fr.**, 6 in 100; Dutch Supp., 1 in 10; Mex., 3 in 100; Span., 1 in 30; Swiss, 1 in 20.

## COCAINA.

### COCAINE.



Large, colourless, odourless, monoclinic prisms, having a bitter taste and followed by anaesthesia of the mucous membrane. Obtained from the leaves of *Erythroxylum Coca*, and its varieties.

**Solubility.**—About 1 in 1300 of Water (Paul); 1 in 10 of Alcohol (90 p.c.); 1 in 12 of Olive Oil; 1 in 4 of Oleic Acid; 2 in 1 of Chloroform; 1 in 4 of Ether; 1 in 14 of Oil of Turpentine. Insoluble in Glycerin.

**Official in Fr. and Mex.**

### UNGuentum COCAINÆ. COCAINE OINTMENT.

Dissolve 1 of Cocaine in 4 (by weight) of Oleic Acid at a gentle heat, and mix with 20 of Lard. (1 in 25)

**COCAINÆ HYDROCHLORIDUM.**

COCAINE HYDROCHLORIDE.

HYDROCHLORATE OF COCAINE.—*B.P.* '85.

Colourless, odourless, transparent, prismatic crystals, or acicular crystals, or a white glistening crystalline powder. Taste slightly bitter, producing upon the tongue a tingling sensation followed by numbness of some minutes' duration.

**Solubility.**—2 in 1 of Water; 1 in  $2\frac{1}{2}$  of Alcohol (90 p.c.); 1 in  $2\frac{1}{2}$  of Glycerin; about 1 in 20 of Chloroform; almost insoluble in Ether; insoluble in fixed Oils.

**Medicinal Properties.**—Local anæsthetic, mydriatic. Has been largely used for producing local anæsthesia in examinations of and operations on the eye and throat; and in dentistry ( $\frac{1}{4}$  to  $\frac{1}{2}$  grain being injected into the gum); 2 to 4 p.c. solutions being used for the eye and 20 p.c. for the throat. It has also been used in producing anæsthesia of other mucous membranes, as the urethra, vagina, nose and rectum. It has been used successfully as a preventive of sea-sickness, in doses of  $\frac{1}{4}$  to 1 grain in solution, and in doses of  $\frac{1}{4}$  grain every half-hour in the vomiting of pregnancy. The local applications are assisted by subcutaneous injection in producing anæsthesia of the deeper seated tissues for minor operations and for neuralgia; injected locally for sciatica. As an ointment it is used in painful skin diseases as shingles; in facial neuralgia and in pruritus.

Hypodermic solutions are used, containing 4 to 10 p.c. of the salt.

For external application in neuralgia, 10 or 20 p.c. solution of the alkaloid in Oil of Cloves.

10 p.c. solution applied on lint or cotton wool to a rigid os uteri is followed by rapid dilatation.—*B.M.J.* '98, ii. 1374; '00, i. 1340.

In pertussis, dose  $\frac{1}{16}$  grain three times daily for infants, increasing it according to the age,  $\frac{1}{8}$  grain being given to children of 5 or 6 years.—*L.* '95, i. 1429; *B.M.J.E.* '95, ii. 28.

Combined with Opium in the internal treatment of cancerous disease.—*B.M.J.* '96, ii. 718.

In operations for piles, *B.M.J.* '85, i. 227; '86, ii. 586; *L.* '86, i. 527; and for fistula, *L.* '87, ii. 793; in prostatic disease, *B.M.J.* '86, i. 822, 999; in parturition, *B.M.J.* '85, ii. 473; *L.* '86, i. 1148; for relief of pain in passing catheter, *B.M.J.* '86, ii. 413; in lithotripsy, *B.M.J.* '87, i. 589; '88, i. 972; for scalds, burns, and blisters, *B.M.J.* '85, i. 300; *T.G.* '88, 360; in hayfever, *L.* '85, i. 1021; *B.M.J.* '86, ii. 18; '87, i. 1256; in morphinism, *B.M.J.* '85, ii. 1112; in diabetes, *L.* '89, ii. 735. It is also useful in alcoholism. As an

antigalactagogue, *T.G.* '95, 119. Toxic effects, *L.* '86, i. 658; '95, ii. 1104; '98, i. 718; *B.M.J.* '85, ii. 971, 983, 1060; '87, i. 617; '88, i. 151, 757; *P.J.* (3) xxv. 1185.

Four cases in which toxic symptoms have followed anaesthesia of the throat.—*B.M.J.E.* '96, ii. 95.

Stated to be uncertain in its action as a mydriatic, and cannot be relied upon to produce maximum dilatation of the pupil.—*B.M.J.* '99, ii. 775.

In cocaineisation of the spinal canal, 2 c.c. of a freshly prepared sterilised 2 p.c. solution ( $\frac{1}{2}$  grain), and the quantity should not be exceeded or toxic symptoms may arise. Headache following operation is checked by Phenacetin in 10-grain doses or by Nitro-glycerin or Hyoscine Hydrobromide.—*L.* '02, i. 912, 1051.

$\frac{1}{3}$  grain doses into spinal canal, preceded in some cases by hypodermic injection of 10 minims Liquor Strychninæ.—*L.* '02, ii. 864.

Injection of 1 c.c. (16 minims) of  $\frac{1}{2}$  p.c. solution of Cocaine into the spinal canal to produce anaesthesia.—*L.* '99, ii. 1536.

Suggested as probable that in the long run weaker solutions than 2 p.c., say 1 in 100 to 1 in 400, will be used for intraspinal injection of Cocaine. The use of Euacaine suggested instead of Cocaine on account of its lesser toxicity and greater stability during sterilisation by heat.—*L.* '01, i. 137.

Lumbar injections of 0.01 grammes (=  $\frac{1}{6}$  grain) during labour.—*L.* '01, ii. 365, 645.

The physiological effects of cocaineisation of the spinal canal.—*L.* '01, ii. 1280.

Dangers of anaesthesia by injection of Cocaine into the spinal canal.—*L.* '01, i. 975.

Cocaine intoxication and its demoralising effects.—*B.M.J.* '02, i. 1020, 1041.

**Dose.**— $\frac{1}{6}$  to  $\frac{1}{2}$  grain = 0.01 to 0.03 grammes.

*Ph. Ger.* maximum single dose 0.05 grammes; maximum daily dose 0.15 grammes.

**Prescribing Notes.**—Unless a preservative be used, solutions should be freshly prepared to avoid the formation of a fungus. Salicylic Acid is the best, if not the only effectual preservative for aqueous solutions of Cocaine, but it is very irritating to the eye. As Borax is incompatible with this salt, an equivalent quantity of Boric Acid should be prescribed.

**Incompatibles.**—Alkalies and alkaline Carbonates, Borax, Carbolic Acid, Mercurous and Mercuric Chlorides, and the majority of soluble Silver salts.

**Official Preparations.**—*Injectio Cocainæ Hypodermica*, and *Lamellæ Cocainæ*. Used in the preparation of *Trochiscus Krameria et Cocainæ*.

**Not Official.**—*Pastillus Cocainæ*, *Trochisci Cocainæ*, *Guttae Cocainæ Hydrochloridi*, *Guttae Cocainæ Oleosæ*; *Cocainæ Citras*, *Hydrobromidum*, *Lactas*, *Nitras*, *Oleas*, *Phenylas*, *Salicylas* and

Sulphas; Eucaine (A and B), Eucaine Hydrochloride (A and B), Orthoform, Orthoform Hydrochloride, Benzoyl-pseudotropine, Holocaine and Holocaine Hydrochloride, Acoin, Nirvanin, Nervocidine.

**Antidote.**—Inhalation of Nitrite of Amyl.—*B.M.J.* '87, i. 625, 695, 1401; '88, i. 757. Strychnine and Digitalin.—*L.* '98, i. 718.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Russ., Swed., Swiss and U.S.**

**INJECTIO COCAINÆ HYPODERMICA. HYPODERMIC INJECTION OF COCAINE.**

Dissolve  $\frac{1}{2}$  grain of Salicylic Acid in 6 fl. drm. of boiled Distilled Water; add 33 grains of Cocaine Hydrochloride, dissolve and if necessary add Distilled Water (recently boiled and cooled), *q.s.* to produce 6 fl. drm. (1 in 10)

**Dose.**—By subcutaneous injection, 2 to 5 minims = 0.12 to 0.3 c.c.

11 minims contain 1 grain of Cocaine Hydrochloride.

**LAMELLÆ COCAINÆ. DISCS OF COCAINE.**

Gelatin discs, containing  $\frac{1}{50}$  grain of Cocaine Hydrochloride. Four times the strength of B.P. '85.

Ophthalmic discs each containing about 0.0005 grammie =  $\frac{1}{10}$  grain Cocaine Hydrochloride, are official in Ital. Ph.

**TROCHISCUS KRAMERIÆ ET COCAINÆ. See KRAMERIA.**

Not Official.

**PASTILLUS COCAINÆ.**— $\frac{1}{10}$  grain of Cocaine Hydrochloride in each.—*Throat.*

**TROCHISCI COCAINÆ.**—Each lozenge contains  $\frac{1}{2}$  grain of Cocaine Hydrochloride (*Guy's*);  $\frac{1}{10}$  grain (*Central Throat*);  $\frac{1}{2}$  or  $\frac{1}{6}$  grain (*London*).

**GUTTÆ COCAINÆ HYDROCHLORIDI.**—Cocaine Hydrochloride 10 grains, Distilled Water, 1 fl. oz.—*London Ophthalmic.*

**GUTTÆ COCAINÆ OLEOSÆ.**—Cocaine, 8 grains; Castor Oil, 1 oz.—*St. George's.*

**COCAINÆ CITRAS.**—Colourless, hygroscopic crystals, readily soluble in Water. Used in dentistry.

**COCAINÆ HYDROBROMIDUM.**—Transparent prisms, soluble in Water.

**COCAINÆ LACTAS.**—A white semi-solid, readily soluble in Water. Used as an injection in tubercular cystitis.

**COCAINÆ NITRAS.**—Large, tabular crystals, readily soluble in Water, and in Alcohol (90 p.c.). Used in ophthalmic practice and in urethral surgery in conjunction with Silver Nitrate.

**COCAINÆ OLEAS.**—A crystallisable salt, insoluble in Water, soluble in Oleic Acid and fixed Oils. Is useful when a salt of Cocaine is required in a fatty basis such as an ointment or suppository.

**COCAINÆ PHENYLAS** (Cocaine Carbolate).—A yellow, or yellowish-brown, semi-solid mass. Insoluble in Water, soluble in Alcohol (90 p.c.) and in Ether. Introduced as a local anæsthetic, analgesic and sedative. Combined with Acetanilide it is stated to have been found useful in gastralgia in doses of  $1\frac{1}{2}$  grains daily. 1 drop of a 10 p.c. alcoholic solution of the salt has been found useful in conjunctival catarrh. Has also been found useful in dentistry. Owing to its insolubility is not so rapidly absorbed, and the action is more prolonged.

**Dose.**—Internally,  $\frac{1}{12}$  to  $\frac{1}{6}$  grain = 0.005 to 0.01 grammes.

**COCAINÆ SALICYLAS.**—Short, thick, somewhat deliquescent crystals, soluble 5 in 1 of Water,  $2\frac{1}{2}$  in 1 of Alcohol (90 p.c.).

**Dose.**— $\frac{1}{6}$  to  $\frac{1}{2}$  grain = 0.01 to 0.032 grammes.

Has been recommended hypodermically in asthma.

**COCAINÆ SULPHAS.**—In prisms, or as a white, granular powder, soluble in Water.

**EUCAINE.**—Under this name two basic principles have been introduced. **Eucaine (A)** (Methylester of Benzoyl-n-methyl-tetra-methyl-gamma-oxy-piperidine-carboxylic Acid). **Eucaine (B)** (Benzoyl-vinyl-di-aceton-alkamine). Synthetic products resembling Cocaine both in chemical and physiological action.

Eucaine (B) is the base in general use. It is insoluble in Water, but readily soluble in Alcohol (90 p.c.) and in Ether. Soluble 1 in  $1\frac{1}{2}$  of Aniline Oil.

**EUCAINE HYDROCHLORIDE.**—There are two salts bearing this name, marked A and B, and prepared from the corresponding bases Eucaine A and Eucaine B. The B salt is that generally used in medicine, and it is the practice to dispense it when Eucaine Hydrochloride is ordered unless the A is specified.

**Solubility.**—1 in 40 of Water, 1 in 12 of Alcohol (90 p.c.), 1 in 4 of Aniline Oil.

**Medicinal Properties.**—A powerful local anæsthetic. It is not so generally effective as Cocaine, but is less toxic. Solutions of Eucaine salts may be sterilised by boiling without undergoing decomposition.

Is superior to Eucaine Hydrochloride (A) for use in ophthalmic work, as it is free from the irritating effects of the latter, and is an equally powerful local anæsthetic. Used in 2 p.c. aqueous solution. 2 drops applied every three minutes until 10 drops have been used.—*B.M.J.* '97, i. 134; '97, ii. 1560; *L.*'00, i. 1106.

A 2 p.c. solution recommended for hypodermic use, 40 minims in two doses of 20 minims each distributed over three or four places.—*L.*'99, ii. 552.

5 to 8 p.c. usual strength of solution necessary to produce anæsthesia for minor surgical operations. Usual dose 20 minims,

and as much as 120 minims used without unfavourable results.—*L.* '99, i. 137; '99, ii. 318.

10 to 15 minims of an approximately 5 p.c. solution made with equal parts of Aniline Oil and Alcohol (90 p.c.) for the production of local anæsthesia of the ear.—*L.* '00, i. 1125.

Solution recommended by Barker:—Euclidean Hydrochloride B, 1; Sodium Chloride, 8; Sterilised Water, 1000; Injection of 10 c.c. As much as  $10\frac{1}{2}$  oz. injected without any ill effects. Such an amount, however, rarely necessary. Powders containing sufficient of the two salts for two ordinary operations may be kept ready and can be dissolved in the necessary quantity of water and boiled before use.—*L.* '99, i. 282; '00, i. 156.

Addition of 0·8 p.c. Sodium Chloride to solution of Euclidean improves its analgesic properties and has also other desirable effects.

An improved solution (Barker's) for the production of local anæsthesia:—B Euclidean Hydrochloride, 0·2 gramme; Sodium Chloride, 0·8 gramme; Adrenalin Chloride, 0·001 gramme; Distilled Water, 100 grammes.—*L.* '03, ii. 204.

Herniotomy performed under local anæsthesia produced by the injection of 40 minims of a 1 p.c. solution, followed by 20 minims more of the same solution dropped into the wound during operation.—*L.* '03, ii. 530.

Is used with suprarenal extract, which contracts the blood vessels after incisions.—*St. Thomas's.*

Hypodermic injection of 40 minims of a  $7\frac{1}{2}$  p.c. solution Euclidean Hydrochloride (equal to  $2\frac{3}{4}$  grains of the drug) before operation of suprapubic cystotomy.—*L.* '00, i. 928.

The use of a solution of Cocaine Hydrochloride 10, B Euclidean 10, Aniline 50, Alcohol (90 p.c.) 50, for the production of local anæsthesia in the ear, nose and throat, in order to obviate the dangers of using strong Cocaine solutions. To avoid change of colour, the solutions are best kept separately; e.g. as a 20 p.c. solution of Cocaine in Alcohol (90 p.c.), and a 15 to 20 p.c. solution of Euclidean (B) in Aniline Oil.—*L.* '01, i. 698.

30 minims of a 5 p.c. solution injected around bed of the finger nail causes swelling and unhealthy blueness of the skin of finger tip.—*L.* '01, i. 1510. Pointed out in reference to above that Euclidean solutions should be boiled immediately before use, injected at body temperature, and the use of a syringe previously used for Morphia should be avoided.—*L.* '01, i. 1648.

Concentrations of solutions recommended in ophthalmic work, 2 p.c.; in the urethra and bladder, 2 p.c.; for the nose and throat or as a paint or spray for mucous surfaces generally, 5 to 10 p.c.; and in dental work, 2 to 5 p.c.—*B.M.J.E.* '03, i. 36.

The relative toxicity of Cocaine and Euclidean.—*T.G.* '99, 689.

**ORTHOFORM.**—This base is Para-amido-meta-hydroxybenzoic Acid Methyl Ester, a synthetic product introduced as a substitute for Cocaine. A white, odourless, tasteless, crystalline powder, or in colourless crystals melting at  $120^{\circ}$  C. Soluble,

1 in 450 of Water; 1 in 6 of Alcohol (90 p.c.); 1 in  $13\frac{1}{2}$  of Ether.

Recently another base, Meta-amido-para-hydroxybenzoic Acid Methyl Ester, has been introduced under the name of 'Orthoform New.'

**Medicinal Properties.**—Local anaesthetic employed in ulcerations of the upper air passages. Useful where nerve endings are exposed, but has no action on unbroken skin and but little on healthy mucous membrane. Best administered as a spray, using 10 p.c. solution made with Alcohol (45 p.c.), but the powder may be employed either alone or mixed with an equal quantity of Lycopodium for insufflation, or in the form of a 10 p.c. ointment; a saturated solution of Orthoform in Collodion is used as a varnish. Said to be of value as an anodyne in ulcer or cancer of the stomach in doses of 8 to 16 grains. An aqueous solution of the Hydrochloride is used as a paint.—*B.M.J.* '98, i. 362; *Pr. 1xi. 505.*

Non-toxic and powerfully antiseptic. On account of its sparing solubility it is but slowly absorbed. Nearly 2 oz. have been employed in the course of a week for dusting wounded surfaces without injurious effect.—*B.M.J.E.* '97, ii. 55; *P.J.* '97, ii. 277; *B.M.J.* '98, i. 362.

As an ointment it is useful in treatment of burns; in ulcers of the leg and in syphilitic ulcers.—*L.* '98, i. 1024; *B.M.J.E.* '98, i. 76; *P.J.* '98, ii. 661.

Used (suspended in Glycerin) for operations within the uterus.—*L.* '98, i. 1434.

Cotton wool plug steeped in an alcoholic solution introduced into the cavity of a tooth for the relief of toothache.—*T.G.* '99, 270; *P.J.* '99, ii. 83.

In the treatment of fissure of the nipple.—*T.G.* '99, 337.

As an insufflation in the treatment of stomatitis in children.—*B.M.J.E.* '99, i. 75.

As an emulsion, Orthoform, 25; Olive Oil, 100; as an insufflation 10 to 20 centigrammes, or as a 10 p.c. aqueous solution of the Hydrochloride for laryngeal application.—*B.M.J.E.* '99, i. 20, 64.

**ORTHOFORM HYDROCHLORIDE.**—A white, crystalline powder which is soluble, 1 in 9 of Water, 1 in 17 of Alcohol (90 p.c.), Insoluble in Ether. It may be employed for internal administration or for urethral injection, but is too acid for hypodermic injection or application to the eye.—*L.* '97, ii. 738; *B.M.J.E.* '97, ii. 55. Injection of a 10 p.c. solution in gleet.—*L.* '97, ii. 738.

**Dose.**—1 to 5 grains = 0.06 to 0.32 grammes.

**BENZOYL-PSEUDOTROPEINE** (Tropacocaine, Tropain).—First obtained from Java Coca Leaves and afterwards made synthetically. The Hydrochloride has been used to produce anaesthesia of the eye during operations; it is much less toxic than Cocaine.—*B.M.J.* '92, ii. 406; '94, ii. 598; *L.* '94, ii. 598; *T.G.* '94, 653; *M.A.* '93, 52.

0·05 grammie (=  $\frac{3}{4}$  grain) in 1 c.c. (16 minims) Water as an injection into the spinal canal to produce analgesia.—*B.M.J.E.* '02, i. 75.

0·05 grammie (=  $\frac{3}{4}$  grain) dissolved in 5 c.c. (80 minims) of cerebro-spinal fluid and reinjected to induce anaesthesia without undesirable concomitants.—*Merck's Report*, '02, 166.

Intra-spinal injection of 1 c.c. of a 5 p.c. solution in puerperal eclampsia.—*B.M.J.E.* '02, ii. 6.

**HOLOCAINE** (Para-diethoxy-ethenyl-diphenyl-amidine).—A synthetic product introduced as a substitute for Cocaine. In colourless crystals which melt at 121° C. Insoluble in Water, readily soluble in Alcohol (90 p.c.) and Ether.

A powerful base, forming sparingly soluble salts with acids.

**HOLOCAINE HYDROCHLORIDE.**—The Hydrochloride of the above base. Occurs in colourless, needle-shaped crystals.

**Solubility.**—1 in 50 of Water; 1 in 6 of Alcohol (90 p.c.).

**Medicinal Properties.**—Used in the form of 1 p.c. solution in ophthalmic surgery. Produces complete and rapid anaesthesia without pain, and neither dilates the pupil nor affects the blood vessels. On account of its toxicity, it cannot be used hypodermically. Its instillation into the eye causes a slight feeling of burning which rapidly passes off.—*L.* '97, i. 1466; *B.M.J.* '98, ii. 619; *B.M.J.E.* '97, i. 55, 75, 87, 92; '98, i. 99; *Pr. lxi.* 503.

A 1 p.c. solution did not show the slightest cloudiness when allowed to stand in an open vessel for two months.—*P.J.* '97, i. 368.

It is stated to possess the following advantages: (1) it does not cause mydriasis; (2) does not affect accommodation; (3) causes deeper anaesthesia of the iris; (4) often proves efficient in cases of painful inflammation where Cocaine fails; (5) produces no toxic effects unless injected subcutaneously or swallowed; (6) has no effect on the corneal epithelium; (7) is strongly bactericidal in action. The solutions should be preserved in porcelain and not in glass vessels.—*T.G.* '99, 322, 612; *B.M.J.E.* '99, ii. 20; *Pr. lxiv.* 476; *M.A.* '00, 28.

**ACOINE** (Di-para-anisyl-mono-phenetyl-guanidine hydrochloride).—A white, crystalline powder, soluble 1 in 50 of Water. Introduced as a substitute for Cocaine as being less toxic than the latter.

A useful solution for producing anaesthesia is Acoine, 1; Sodium Chloride, 8; Distilled Water, 1000. Concentrated solutions should not be employed, as they give rise to irritation. The solutions, moreover, should not be exposed to the light.—*L.* '99, i. 1372; *B.M.J.* '99, i. 1340; *P.J.* '99, i. 538; *C.D.* '99, i. 701.

In subconjunctival injections as a local anaesthetic; no pain was produced when a mixture of equal parts of a 1 in 1000 solution of Mercury Cyanide and a 1 in 100 Acoine solution was injected.—*L.* '99, ii. 1082.

Solutions of 1 in 100 and 1 in 300 produce satisfactory anaesthe-

sia in an unirritated eye; when there was much congestion it failed.—*T.G.* '99, 697; *B.M.J.E.* '99, ii. 76.

**NIRVANIN** (Hydrochloride of Diethyl-glycocol-p-para-amido-ortho-hydroxybenzoic Methyl Ester).—Small white prisms, readily soluble in Water. Introduced as a local anaesthetic in surgical and dental operations. As a substitute for Cocaine and Orthoform, generally used in the form of a 2 p.c. solution. A 5 p.c. solution causes irritation when dropped into the eye. As much as 7 grains may be injected hypodermically without injury. A 1 p.c. solution has a marked bactericidal action.—*P.J.* '99, i. 95, 481; *C.D.* '99, i. 701.

**NERVOCIDINE**.—A yellow, hygroscopic, amorphous powder, readily soluble in Water, slightly soluble in Alcohol (90 p.c.) and in Ether. It is obtained from an Indian plant ‘Gasu-Basu.’ Introduced as a new local anaesthetic. The irritation which it produces, the length of time required to produce anaesthesia, and its liability to produce toxic symptoms, however, preclude its general use. At present its employment is restricted to dental work.—*L.* '02, i. 127; *P.J.* '02, ii. 211.

## COCCUS.

### COCHINEAL.

The dried fecundated female Insect, *Coccus Cacti*; reared on *Nopalea coccinellifera*, and on other species of *Nopalea*.

When dried in the sun the insects are of an ash-grey colour with a silvery surface, but when killed by immersion in boiling water they have a reddish appearance, and if dried by artificial heat they are black.

**Medicinal Properties**.—Used chiefly as a colouring agent. Was formerly given in whooping-cough.

**Official Preparation**.—Tinctura Coccii. Used in the preparation of Tinctura Cardamomi Composita and Tinctura Cinchonæ Composita.

**Not Official**.—Carmine, Liquor Carmini and Liquor Coccoineus.

**Official in U.S., Belg., Swed. and Swiss, Coccionella; Fr., Cochenille; Port., Cochonilha; Mex. and Span., Cochinilla.**

### TINCTURA COCCI. TINCTURE OF COCHINEAL.

1 of Cochineal, in powder macerated with 10 of Alcohol (45 p.c.),

Now 1 in 10 instead of 1 in 5.

**Dose**.—5 to 15 minims = 0·3 to 0·9 c.c.

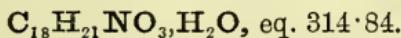
**Official in Dutch Supp.**, 1 in 6; Fr. and Mex., 1 in 10; by weight.

**Not Official.**

**CARMINE.**—Prepared from Cochineal, an excellent colouring agent for powders and ointments. It is also used as a staining agent in microscopy.

**LIQUOR CARMINI (U.S.N.F.).**—Carmine, 6; Water of Ammonia, 35; Glycerin, 35; Water, *q.s.* to yield 100.

**LIQUOR COCCINEUS (U.S.N.F.).**—Cochineal, in No. 50 powder, 6; Potassium Bitartrate, 6; Glycerin, 50; Alcohol (90 p.c.), 3; Distilled Water, *q.s.* to yield 100.

**CODEINA.****CODEINE.**

A crystalline alkaloid (Methyl Morphine) obtained from Opium or synthetically from Morphine.

**Solubility.**—1 in 80 of Water; 1 in 24 of boiling Water; 1 in 2 of Alcohol (90 p.c.); 1 in 2 of Chloroform; 1 in 30 of Ether; 1 in 12 of Benzol; 1 in 85 of Liquor Ammoniae.

**Medicinal Properties.**—It has been given with benefit in diabetes (an entire abstinence from starchy food being strictly observed) in doses of 1 grain three times a day, gradually raised to 2 grains. It has been found useful in relieving the hacking cough of phthisis, also in ovarian pain.

It has a powerful action in allaying abdominal pain, and it can be pushed to a much greater extent than Morphine without causing drowsiness or interfering with the respiration or with the action of the bowels.—*B.M.J.* '88, i. 1214.

**Dose.**— $\frac{1}{4}$  to 2 grains = 0·016 to 0·13 gramme.

Swiss, maximum single dose, 0·1 grammie; maximum daily dose, 0·4 grammie.

**Prescribing Notes.**—For coughs it is usually given in the form of syrup, linctus or pastils, or as a pill, using Powder of Gum Acacia and 'Diluted Glucose' as excipients. For diabetes it is sometimes combined with Extract of Cascara. Codeine Phosphate in solution is used for hypodermic injection.

**Official Preparations.**—Syrupus Codeinæ from Codeinæ Phosphas.

**Not Official.**—Codeine Pastils, Linctus Codeinæ, Pilula Codeinæ Composita, Codeinæ Iodas, Apocodeinæ Hydrochloridum.

**Official in Belg., Dan., Dutch, Fr., Hung., Ital., Jap., Mex., Port., Russ., Span., Swed., Swiss and U.S.**

**CODEINÆ PHOSPHAS. CODEINE PHOSPHATE.**

This crystalline product ( $C_{18}H_{21}NO_3$ ,  $H_3PO_4)_2$ ,  $3H_2O$ , eq. 842·20, is the most soluble salt of Codeine.

**Solubility.**—1 in 4 of Water; 1 in 200 of Alcohol (90 p.c.).

**Dose.**— $\frac{1}{4}$  to 2 grains = 0·016 to 0·13 grammes.

*Ph. Ger.* maximum single dose, 0·1 grammes; maximum daily dose, 0·3 grammes.

**Official in** Dutch Supp., Ger. Norw., Russ., Swed. and Swiss.

**Codeinæ Hydrochloridum** is Official in Austr. Add. and Dutch Supp. It is crystalline and soluble in Water. **Codeinæ Salicylas** is also crystalline, and readily soluble in Alcohol and Ether, but only slightly soluble in Water. Doses same as Phosphate.

#### · SYRUPUS CODEINÆ. SYRUP OF CODEINE.

Codeine Phosphate, 40 grains; Distilled Water,  $\frac{1}{4}$  fl. oz.; Syrup,  $19\frac{3}{4}$  fl. oz. (1 grain in 240 minimis)

*B.P.* directs the Codeine Phosphate to be dissolved in the Distilled Water, but 40 grains of Codeine Phosphate will not dissolve in  $\frac{1}{4}$  fl. oz. Distilled Water: it is better to use 180 minimis.

**Dose.**— $\frac{1}{2}$  to 2 fl. drams = 1·8 to 7·1 c.c., containing  $\frac{1}{8}$  to  $\frac{1}{2}$  grain Codeine Phosphate.

It is 50 p.c. stronger than the Syrup described in previous editions of the *Companion*.

**Official in** Belg., Fr., Ital., Mex. and Swiss, 1 in 500; Span., 1 in 600. Made with the Alkaloid.

#### Not Official.

**CODEINE PASTILS.**—Contain  $\frac{1}{8}$  grain = 0·008 grammes of Codeine in each. One for a dose when the cough is troublesome.

An improvement on Codeine Jelly.

**Official in** Ital.,  $\frac{1}{13}$  grain = 0·005 grammes in each.

**LINCTUS CODEINÆ.**—Syrup of Codeine, 20 minimis; Glycerin, 20 minimis; Lemon Juice, 18 minimis; Chloric Ether, 2 minimis.—*Consumption*.

Syrup of Codeine,  $\frac{1}{2}$  fl. dram.; Syrup of Virginian Prune,  $\frac{1}{2}$  fl. dram.—*Guy's*.

**PILULA CODEINÆ COMPOSITA.**—Codeine,  $\frac{1}{2}$  grain; Kaolin,  $\frac{1}{2}$  grain; Extract of Cascara, 2 grains; Hard Soap, to 4 grains.—*Guy's*.

**CODEINÆ IODAS.**—A combination of Iodic Acid with the alkaloid. Has been introduced as an analgesic.

**Dose.**— $\frac{1}{2}$  grain = 0·032 grammes by hypodermic injection.

**Apocodeine.**—Produced by heating Codeine with Zinc Chloride; it forms brown amorphous resinous masses.

**Apocodeinæ Hydrochloridum** is supplied as a brown, amorphous powder, soluble in Water. Dott doubts the existence of Apocodeine, and states that the commercial products sold under this name are not of a very definite nature.

It has been used by subcutaneous injection in 30-minim doses of a 1 p.c. solution to produce increased peristalsis of the bowel, and has also been used internally as an expectorant in bronchial affections and as a sedative in mental disturbance, in doses of 0·02 to 0·06 grammes ( $\frac{1}{3}$  to 1 grain). A suitable combination for the internal administration is Apocodeine Hydrochloride, 0·5 gramme; Syrup of Raspberry, 25 grammes; Distilled Water, 100 grammes.

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

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## COLCHICUM.

The fresh Corm of *Colchicum autumnale*, as well as the dried, ripe Seeds, are Official.

**Medicinal Properties.**—It is a specific in gout, especially the acute form, controlling the pain and inflammation and cutting short the attack. May be combined with other cholagogues, or given with saline purgatives in cases of hepatic congestion in gouty patients. It may produce gastric or intestinal irritation, even in ordinary doses, and should then be discontinued for a time. The Extract is frequently prescribed with Dover's Powder to relieve painful gout.

**Dose.**—Of the dried Corm, 2 to 5 grains = 0·13 to 0·32 gramme, but usually given in the form of Extract or Wine.

**Incompatibles.**—Tincture of Iodine, Guaiacum, and vegetable astringents.

**Official Preparations.**—Extractum Colchici and Vinum Colchici from the Corm, Tinctura Colchici Seminum from the Seeds.

**Not Official.**—Tinctura Colchici Composita, Tinctura Colchici Florum and Vinum Colchici Seminum. Colchicina, Colchicinae Salicylas.

**Antidotes.**—In case of poisoning with Colchicum, emetics, Tannic Acid, demulcent drinks, and, if coma be present, Brandy, Ammonia, Coffee, and other powerful stimulants may be given. Hypodermic injection of  $\frac{1}{2}$  grain of Morphine.

## COLCHICI CORMUS. COLCHICUM CORM.

The fresh Corm of *Colchicum autumnale*, collected in early summer; also the same stripped of its coats, sliced transversely and dried at a heat not exceeding 150° F. (65·5° C.).

Official in Fr., Mex., Port., Span. and U.S.

## EXTRACTUM COLCHICI. EXTRACT OF COLCHICUM.

A soft extract prepared from fresh Colchicum Corms (deprived of their coats) by heating the clear juice to 212° F.

(100° C.), and subsequent evaporation of the strained liquid at 160° F. (71.1° C.).

Dose.—100 lb. of Corms yield about 4 lb. of Extract.

**Dose.**— $\frac{1}{4}$  to 1 grain = 0.016 to 0.06 grammes.

Official in Belg., Fr., Ital. and Mex., Alcoholic Extract of Seeds; Mex. and Span., Alcoholic from Corms; Swiss has Fluid Extract of Seeds; Mex. and U.S., Fluid Extracts of Corms and Seeds.

### VINUM COLCHICI. COLCHICUM WINE.

4 of Colchicum Corm in No. 20 powder, macerated in 20 of Sherry. (1 in 5)

**Dose.**—10 to 30 minims = 0.6 to 1.8 c.c.

Diluted Acetic Acid appears to be about as good a solvent as Sherry, but Alcohol (45 p.c.) was better than either.—P.J. '97, i. 173. Further notes on the same.—P.J. '98, i. 131.

Official in U.S., 1 in 2.5 White Wine; Fr., 1 and 10 Malaga; Ital., 1 and 10 Marsala; Port., 1 and 10 Madeira; Mex., 1 in 10 Sherry; Span., 1 and 16.6 Sherry. An Acetum Colchici is Official in Dutch Supp.

### COLCHICI SEMINA.—COLCHICUM SEEDS.

The dried, ripe Seeds of *Colchicum autumnale*.

The seeds contain 0.6 to 1.0 p.c. of Alkaloid.

Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Span., Swed., Swiss and U.S.

### TINCTURA COLCHICI SEMINUM. TINCTURE OF COLCHICUM SEEDS.

1 of Colchicum Seeds, in No. 30 powder, percolated with Alcohol (45 p.c.), to yield 5.

Now 1 in 5 instead of 1 in 8.

**Dose.**—5 to 15 minims = 0.3 to 0.9 c.c.

*Ph. Ger.* maximum single dose, 2.0 grammes; maximum daily dose, 6.0 grammes.

Official in Austr. and Jap., 1 in 10; Belg., Fr., Hung., Mex. and Port., 1 in 5; Dutch, Ger., Ital., Swed. and Swiss, 1 and 10; U.S., 15 in 100; all from Seeds. Port. and Span., 1 in 5 with Corms. All by weight except U.S.

### Not Official.

**TINCTURA COLCHICI COMPOSITA** (*Ph. Lond.*).—1 of bruised Colchicum Seeds, macerated with 8 of Aromatic Spirit of Ammonia.

**Dose.**—15 to 30 minims = 0.9 to 1.8 c.c.

**TINCTURA COLCHICI FLORUM.**—Fresh Flowers, 2; Alcohol (90 p.c.), by weight, 1; after seven days, filter.

It will yield on the average 0.1 p.c. of total Alkaloid.

**Dose.**—10 to 30 minims = 0·6 to 1·8 c.c. This preparation closely resembles the Eau Médicinale.

**VINUM COLCHICI SEMINUM.**—1 of Colchicum Seeds, in fine powder, macerated with 10 of Sherry.

**Dose.**—10 to 30 minims = 0·6 to 1·8 c.c.

*Ph. Ger.* maximum single dose, 2 grammes; maximum daily dose, 6 grammes.

**Official in Austr. and Dutch,** 1 and 10 Malaga; Hung., 1 in 5 Malaga; Belg., 1 and 16·6 Malaga and Spirit; U.S., 15 in 100 White Wine; Dan., Ger., Jap. and Norw., 1 and 10 Sherry; Fr., 1 and 16·6 Malaga; Port., 1 and 10 Madeira; Swiss, Fluid Extract 1 in 10 Marsala. All by weight except U.S.

**COLCHICINA.**—A yellowish powder, soluble in Water and Alcohol (90 p.c.).

**Dose.**— $\frac{1}{120}$  to  $\frac{1}{32}$  grain = 0·00054 to 0·002 gramme.

Colchicein is Tri-methyl-acetyl-colchicinic Acid, and crystallises in shining white needles. Colchicine is the Methyl Ester of Colchicein.

**COLCHICINÆ SALICYLAS.**—Yellow, amorphous powder, soluble in Water, in Alcohol (90 p.c.), and in Ether. Has been recommended in the treatment of gout and rheumatism as combining the properties of its two constituents.

**Dose.**— $\frac{1}{120}$  to  $\frac{1}{32}$  grain = 0·00054 to 0·002 gramme.

A solution of this Salt ( $\frac{1}{250}$  grain) in Methyl Salicylate enclosed in gelatin capsule is known under the name of 'Colchisal.'

### Not Official.

### COLLINSONIA.

The Root of *Collinsonia Canadensis* (Stone Root).

Various preparations of this have been recommended in acute cystitis, and in the treatment of renal calculi.—*B.M.J.* '87, ii. 712; *L.* '88, i. 868.

**Dose.**—15 to 60 grains = 1 to 4 grammes.

**TINCTURA COLLINSONIÆ.**—Collinsonia Root, 1; Alcohol (60 p.c.), 10.

**Dose.**—30 to 120 minims = 1·8 to 7·1 c.c.

A 1 in 1 Fluid Extract is also made.

**Dose.**—15 to 60 minims = 0·9 to 3·6 c.c.

### COLOCYNTHIDIS PULPA.

#### COLOCYNTH PULP.

The dried pulp of the Fruit of *Citrullus Colocynthis*, freed from seeds. The fruit is imported chiefly from Smyrna, Trieste, France and Spain.

**Medicinal Properties.**—It is a powerful, drastic, hydragogue cathartic, dangerous in large doses. It should not be prescribed alone; but in combination it is very commonly prescribed as an aperient, in the form of Compound Extract or Pill, and combined with Henbane. The Tincture is ordered in Mixtures.

**Dose.**—2 to 8 grains = 0·13 to 0·52 grammes.

*Ph. Ger.* maximum single dose, 0·3 gramme; maximum daily dose, 1 gramme.

**Official Preparations.**—Extractum Colocynthidis Compositum and Pilula Colocynthidis Composita; Pilula Colocynthidis Composita is used in the preparation of Pilula Colocynthidis et Hyoscyami.

**Not Official.**—Tinctura Colocynthidis.

**Official in Austr., Belg., Dan., Dutch, Fr. (Coloquinte), Ger., Hung., Ital. (Coloquintide), Jap., Norw., Port., Russ., Mex., Span., Swed., Swiss and U.S.**

### **EXTRACTUM COLOCYNTHIDIS COMPOSITUM. COMPOUND EXTRACT OF COLOCYNTH.**

Colocynth Pulp, 6; Extract of Barbados Aloes, 12; Scammony Resin, 4; Curd Soap, in shavings, 4; Cardamom Seeds, in the finest powder, 1; Alcohol (60 p.c.), 160.

B.P. directs the Colocynth to be macerated in the Alcohol for four days; press out the Tincture; remove the Alcohol by distillation, and add the Extract of Aloes, Scammony Resin and Soap; evaporate to a firm extract, adding the Cardamoms towards the end of the process; but it is better to evaporate the Colocynth Extract to dryness, powder it, and mix with the other ingredients to form Pulv. Ext. Coloc. Co.; the product weighs about 24.

6 of Compound Extract is about equal to 1½ of Pulp (Simple Extract ½), Extract of Aloes 3, Resin of Scammony 1, Curd Soap 1, Cardamoms ¼, Water ½.

**Dose.**—2 to 8 grains = 0·13 to 0·52 grammes.

*Ph. Ger.* maximum single dose of the Simple Extract, 0·05 grammes; maximum daily dose, 0·15 grammes.

Commonly prescribed with Extract of Hyoscyamus, to prevent griping.

**Official in Port., Colocynth 30, Aloes 55, Scammony 22, Hard Soap 15, Cardamoms 3; Span., contains Colocynth, Aloes, Scammony, and six other ingredients; Swed., Colocynth 5, Aloes 10, Jalap 3, Cardamoms 1, Soap 2; Swiss, Extract of Colocynth 2, Extract of Aloes 10, Scammony 4, Cardamoms 1; Soap 3; Russ., Extract Colocynth 3, Aloes 10, Scammony 8, Extract of Rhubarb 5; U.S., Extract Colocynth 16, Purified Aloes 50, Resin Scammony 14, Cardamoms 6, Soap 14. Austr., Belg., Dan., Dutch,**

Fr., Ger., Hung., Ital., Jap., Mex., Russ., Swiss and U.S., have a Simple Extract made with Alcohol.

**PILULA COLOCYNTHIDIS COMPOSITA.** COMPOUND PILL OF COLOCYNTH.

Colocynth Pulp, 1 ; Barbados Aloes, 2 ; Scammony Resin, 2 ; Potassium Sulphate,  $\frac{1}{4}$  ; Oil of Cloves,  $\frac{1}{4}$  ; Distilled Water, q.s. (about  $\frac{1}{4}$ ). (about 1 in 6)

**B.P. Dose.**—4 to 8 grains = 0·26 to 0·52 grammes.

The *minimum* dose is somewhat high, as it is frequently prescribed in smaller doses. The same may be said of the next pill, which is only two-thirds of the strength.

For dispensing, keep the powders and oil ready mixed, and make up the mass as required with Water, or better still with Alcohol (60 p.c.).

Dr. Gregory's favourite pill.

**Official in** Fr., Colocynth 10, Aloes 10, Scammony 10, Honey q.s., Oil of Cloves 0·2 ; Norw., Colocynth 2, Aloes 4, Scammony 4, Oil of Cloves  $\frac{2}{3}$ , Suet 3, Glycerin 3 ; Span., Compound Extract of Colocynth 20, Extract of Colchicum 20, Extract of Opium 1 ; Swed., Compound Extract of Colocynth 7, Cloves 1, Jalap 2, Extract of Wormwood q.s.

**PILULA COLOCYNTHIDIS ET HYOSCYAMI.**  
PILL OF COLOCYNTH AND HYOSCYAMUS.

Compound Pill of Colocynth, 2 ; Extract of Hyoscyamus, 1.

**B.P. Dose.**—4 to 8 grains = 0·26 to 0·52 grammes.

Official in Jap.

This mass when made into 5 grain pills is known as Hamilton's pill, and when in  $2\frac{1}{2}$  grain pills it is known as Christison's pill.

**Not Official.**

**TINCTURA COLOCYNTHIDIS.**—1 of Colocynth Pulp, in coarse powder, macerated with 10 of Alcohol (90 p.c.).

**Dose.**—10 to 15 minims = 0·6 to 0·9 c.c. three times a day.

*Ph. Ger.* maximum single dose, 1 gramme ; maximum daily dose, 3·0 grammes.

**Official in** Belg., Hung. and Mex., 1 in 5 ; Jap., Russ. and Swiss, 1 in 10 ; Ger. and Ital., Fruits 1, Alcohol 10 ; Swed., 1 in 10, with Anise Fruits  $\frac{1}{10}$  ; Dutch, 1 in 14, with  $\frac{1}{8}$  Anise.

**Not Official.**

**CONDURANGO CORTEX.**

The Bark obtained from *Gonolobus condurango*.

**Medicinal Properties.**—It was introduced as a remedy for cancer, but it has not fulfilled the expectations formed of it. It

relieves catarrh and hyperæsthesia of the stomach, and has been used with benefit in ulcer and cancer of the stomach, relieving the vomiting, pain and hæmatemesis, and improving the appetite.—*L.M.R.* '88, 337; *L.* '95, i. 1004.

Official in Austr., Dan., Dutch, Ger., Mex., Norw., Russ., Swed. and Swiss.

**EXTRACTUM CONDURANGO LIQUIDUM (B.P.C.).**—A 1 in 1 fluid extract of Condurango bark prepared by percolation, with Alcohol (60 p.c.). The residue obtained after distilling the Alcohol from the latter portions of the percolate being dissolved in the reserved portion.

Dose.—10 to 60 minims = 0·6 to 3·6 c.c.

A Fluid Extract (1 in 1) is Official in Austr. Add., Ger. and Swed.

Vinum Condurango (1 in 10) is Official in Austr. Add., and Swiss with Marsala; Ger. with Sherry.

Dose.—2 to 8 fl. dram. = 7·1 to 28·4 c.c.

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## CONIUM.

### CONIUM.

The fresh Leaves and young Branches of *Conium maculatum*, as well as the dried, unripe Fruits, are Official.

**Medicinal Properties.**—Sedative and antispasmodic; allays the cough in bronchitic affections, pertussis, and phthisis. Has been recommended in chorea and other spasmodic affections; also in visceral neuralgias and gastric pains. Applied externally in the form of ointment to ease pain of anal fissure or of haemorrhoids, and cancer.

As a result of experiments on animals (guinea pigs and rabbits), the same general action was observed as belonging to Conine, and a standardised fluid extract.—*P.J.* '97, ii. 136.

Dose.—Of the Succus 1 to 2 fl. dram. = 3·6 to 7·1 c.c. Of the Tincture 30 to 60 minims = 1·8 to 3·6 c.c.

*Ph. Ger.* maximum single dose, 0·2 grammie; maximum daily dose, 0·6 grammie.

**Prescribing Notes.**—In consequence of the great variation in strength of Conium preparations, the standardised Fluid Extract, or *Coninæ Hydrobromidum* should be prescribed. 1 fl. dram. of the Fluid Extract is about equal to 1 fl. oz. of Succus Conii (average strength).

**Incompatibles.**—Caustic Alkalies, and vegetable Astringents.

**Official Preparations.**—Succus Conii from the *Folia*. Unguentum Conii from the *Succus*. Tinctura Conii from the *Fructus*.

**Not Official.**—Extractum Conii Liquidum, Pessus Coninæ,

Vapor Conii, Conina, Coninæ Hydrobromidum, and Coninæ Hydrochloridum.

**Antidotes.**—In case of poisoning by Hemlock, stomach-tube or emetics, followed by stimulants, Strychnine hypodermically, artificial respiration.

### CONII FOLIA. CONIUM LEAVES.

The fresh Leaves and younger Branches of *Conium maculatum*, collected when the fruit begins to form.

Official in Belg. and Fr., Leaves; Austr., Dutch, Ger., Mex., Port. and Span., Herb.

### SUCCUS CONII. JUICE OF CONIUM.

3 of Juice, obtained from the fresh leaves and young branches, preserved by the addition of 1 of Alcohol (90 p.c.).

**Dose.**—1 to 2 fl. dram. = 3·6 to 7·1 c.c.

Much larger doses are given.

### UNGuentum CONII. CONIUM OINTMENT.

Evaporate 8 of the Juice of Conium on a water-bath to 1, at a temperature not exceeding 140° F. (60° C.) and mix with 3 of Hydrous Wool Fat.

Contrary to what might have been expected, the alkaloidal strength of the Juice is not affected by the evaporation.

Becomes mouldy on keeping.—P.J. '98, ii. 165, 232.

### CONII FRUCTUS. CONIUM FRUIT.

The dried, full-grown, unripe Fruits of *Conium maculatum*.

The alkaloidal value of the fruits appears to be as variable as that of the leaves. Some estimations published (C.D. '92, ii. 401) gave 0·17 to 0·91, average 0·58 p.c. of Conine.

Official in Belg., Fr., Ger., Mex., Port., Span., Swiss and U.S.

### TINCTURA CONII. TINCTURE OF CONIUM.

1 of Conium Fruit, recently reduced to No. 40 powder, percolated with Alcohol (70 p.c.), q.s. to yield 5.

Now 1 in 5 instead of 1 in 8.

**Dose.**—30 to 60 minims = 1·8 to 3·6 c.c.

Official in Belg. and Port., Tinct. Cicutæ, 1 in 5, also Fresh Herb 1, Spirit 1; Fr. and Span., from dried Leaves, 1 in 5, Fr., also Alcoolature, fresh Herb 1, Spirit 1, also Ethereal 1 in 5; Mex., Leaves, 1 in 5.

Not Official.

**EXTRACTUM CONII LIQUIDUM (B.P.C.).**—A standardised liquid extract prepared with Alcohol (60 p.c.) acidified with about 0·8 p.c. of Acetic Acid, and adjusted to produce a liquid containing alkaloids equivalent to 1 p.c. alkaloidal hydrochlorides.

**Dose.**—5 to 15 minims = 0·3 to 0·9 c.c.

**PESSUS CONINÆ.**—Conine  $\frac{1}{2}$  minim; Gelatin Basis 20 grains.  
—*Women.*

**VAPOR CONII.**—Exsiccated Sodium Carbonate 20 grains;  
Water, 20 oz. at 140° F.: dissolve, and add Juice of Conium,  
2 fl. dram.: for an inhalation.

**CONINA.** *Syn. CICUTINE.* ( $C_8H_11N$ , eq. 126·22.)—A colourless, or pale yellow, volatile oily liquid, with a characteristic penetrating odour. Obtained from *Conium maculatum*. It unites with acids to form crystalline salts, which are much more stable than the alkaloid.

Sp. gr. 0·886 (Schorm), 0·844 (Ladenburg). It boils at about 336° F. (169° C.). It is dextro-rotatory.

**Solubility.**—1 in 100 of Water. It mixes in all proportions with Alcohol (90 p.c.) and with Ether.

**Dose.**—It has been given in doses of  $\frac{1}{2}$  grain to 1 grain = 0·0054 to 0·06 gramme; but the Foreign Pharmacopœias give much smaller doses, 1 to 4 milligrammes =  $\frac{1}{4}$  to  $\frac{1}{16}$  grain.

**Official in Belg., Dutch Supp., Fr., Mex. and Span.**

**CONINÆ HYDROBROMIDUM.**—Transparent, colourless, rhombic crystals, or a white, crystalline powder. The usual form for prescribing Conine, of which it contains about 60 p.c.

It should be carefully preserved from the light.

**Solubility.**—1 in 2 of Water; 1 in 3 of Alcohol (90 p.c.).

**Official in Fr. and Mex.**

**Dose.**— $\frac{1}{2}$  to 2 grains = 0·01 to 0·13 gramme.

For hypodermic use,  $\frac{1}{2}$  grain in 5 minims of Water.

**CONINÆ HYDROCHLORIDUM.**—Colourless crystals, readily soluble in Water and in Alcohol (90 p.c.).

### Not Official.

#### CONVALLARIA.

The entire Plant of *Convallaria majalis* (Lily of the Valley).

**Medicinal Properties.**—A cardiac tonic; diuretic. Not cumulative like Digitalis, but according to Mitchell Bruce it is a very uncertain remedy. It has been long employed by the Russian peasantry as a remedy for dropsy. The late Professor Séé considered that it may be used in all forms of heart failure, for it has none of the nauseating effects of Digitalis, nor does it exhaust the contractility of the heart and arteries.

**Official in Fr. (Muguet), Ital., Mex., Span., Swiss and U.S.**

Convallaria contains 2 glucosides—**Convallarin**, a purgative, and **Convallamarin**, allied to Digitalin in its action on the heart; the dose of the latter is  $\frac{1}{8}$  to 2 grains = 0·008 to 0·13 gramme.

**EXTRACTUM CONVALLARIAE** (*Fr.*, *Ital.* and *Span.*).—An aqueous extract of the Stalks and flowers of Convallaria freshly gathered and dried with one-third quantity of leaves and roots. Also made from expressed juice, clarified.

The Russians prepare it from the flowers only; Mex., from roots.

**Dose.**—2 to 5 grains = 0·13 to 0·32 grammie three times a day.

*Ital.* maximum single dose, 0·20 grammie; maximum daily dose, 1·0 grammie.

**EXTRACTUM CONVALLARIAE FLUIDUM** (*U.S.*).—1 in 1, from the rhizome and roots of Convallaria, with diluted Alcohol. (*Swiss*) 1 in 1, from the flowering herb.

**Dose.**—2 to 5 minims = 0·13 to 0·3 c.c.

**TINCTURA CONVALLARIAE** (*B.P.C.*).—1 of Lily of the Valley flowers and stalks dried, in No. 20 powder, percolated with Alcohol (60 p.c.) to yield 8.

**Dose.**—5 to 20 minims = 0·30 to 1·2 c.c.

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## COPAIBA.

COPAIBA.

*B.P.Syn.*—COPAIVA.

An Oleo-Resin, obtained from the trunk of *Copaifera Lansdorffii*, and other species of *Copaifera*.

Obtained from the northern part of South America. The commercial varieties Para, Maranham, Maracaibo and Angostura, are named from the various ports of shipment.

**Solubility.**—(Nearly clear) 1 in 1 (*or less*) of Alcohol (90 p.c.), but if more Alcohol be added it becomes cloudy; in all proportions of Absolute Alcohol, Ether, Benzol, and the fixed and volatile Oils; also in four times (*or less*) its bulk of Petroleum Spirit, the solution only yielding a filmy deposit on standing; also 1 in 2 (*or less*) of Glacial Acetic Acid.

**Medicinal Properties.**—Stimulant, antiseptic, and diuretic. Acts more particularly upon the mucous membrane of the genito-urinary tract. Used in gonorrhœa, after the acute stage has passed, and in gleet. Sometimes combined with Buchu and Cubebs. Useful in chronic bronchitis and bronchiectasis, when a disinfectant expectorant is indicated. The resin is used as a diuretic in cardiac and hepatic dropsy, but not in renal, as it is liable to irritate the kidneys.

**Dose.**—30 to 60 minims = 1·8 to 3·6 c.c.

**Prescribing Notes.**—Can be given in the form of pills or

**paste** (see below), also in capsules. It may be suspended in Water by means of Mucilage of Gum Acacia (see p. 2), or Liquor Potassæ, which saponifies it. Cinnamon Water, Peppermint Water, the Tinctures of Orange and Ginger have been used as flavouring agents. The Oil of Copaiba can be suspended by means of Mucilage, as can also the Resin of Copaiba.

When *Copaiba* is boiled with Solution of Potassium Hydroxide the Oil is emulsified, and the Resin separates on standing. The liquid portion is consequently miscible with Water.

**Official Preparation.**—*Oleum Copaibæ.*

**Not Official.**—*Haustus Copaibæ*, *Pasta* *Copaibæ*, *Pilula* *Copaibæ*, *Resina* *Copaibæ*.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

#### **OLEUM COPAIBÆ. OIL OF COPAIBA.**

A yellow, or yellowish-brown, oily liquid, distilled from *Copaiba*. It has a characteristic odour, and a bitter, persistent taste.

The Para Balsam yields from 60 to 90 p.c. of Oil, the Maracaibo about 40 p.c.

**Solubility.**—1 in 20 of Alcohol (90 p.c.) ; nearly insoluble in Alcohol (60 p.c.) ; mixes in all proportions with Absolute Alcohol.

**Dose.**—5 to 20 minims = 0·3 to 1·2 c.c.

**Official in U.S.**

#### **Not Official.**

**HAUSTUS COPAIBÆ.**—*Copaiba*, 15 minims ; Solution of Potassium Hydroxide, 5 minims ; Spirit of Nitrous Ether, 15 minims ; Mucilage of Gum Acacia, 60 minims ; Camphor Water, to 1 fl. oz.—*St. Bartholomew's*.

**PASTA COPAIBÆ.**—*Copaiba*, 8 ; Powdered Cubebs, 24 ; Extract of Hyoscyamus, 1 ; Camphor, 1 ; Treacle, g.s.

**Dose.**—A piece the size of a filbert nut three or four times a day in gonorrhœa.—*L.* '88, i. 1019.

**PILULA COPAIBÆ.**—*Copaiba*, 94 ; Magnesia, 6 ; mix intimately and set aside to concrete. Should the mixture not concrete in eight or ten hours, the *Copaiba* before use should be shaken with  $\frac{1}{2}$  of its weight of Water, then the uncombined Water allowed to subside and the *Copaiba* poured off.

**Official in Belg., Balsamum** *Copaibæ Solidefactum* ; U.S., Massa *Copaiba*.

**RESINA COPAIBÆ.**—Prepared from the Oleo-resin by distilling off the Volatile Oil.

A yellowish, or brownish-yellow, brittle resin, with an acid reaction. Soluble in Alcohol.

**Official in U.S.**

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**CORIANDRI FRUCTUS.****CORIANDER FRUIT.**

The dried, ripe Fruit of *Coriandrum sativum*.

**Medicinal Properties.**—Stimulant, aromatic, and carminative.

**Dose.**—20 to 60 grains = 1·3 to 4 grammes.

**Official Preparation.**—Oleum Coriandri. Contained in Confectio Sennæ, Syrupus Rhei, Tinctura Rhei Composita, and Tinctura Sennæ Composita. The Oil is contained in Syrupus Sennæ.

**Official in Austr., Belg., Dan., Dutch, Fr., Hung., Mex. (Culantro), Norw., Port. (Coentro), Span. (Colantro) and U.S.**

**OLEUM CORIANDRI. OIL OF CORIANDER.**

A colourless, or pale yellow oily liquid, sp. gr. 0·867 to 0·887, possessing a strong characteristic odour and taste.

Consists to the extent of 90 p.c. of dextro-rotatory Linalool,  $C_{10}H_{18}O$ ; sp. gr. 0·868; boiling point, 194°–198° C.—P.J. (3) xxi. 940.

**Solubility.**—2 in 1 of Alcohol (90 p.c.); 1 in 75 of Alcohol (60 p.c.).

1 lb. of fruit yields about 42 grains of Oil.

Used to render medicines more palatable, and prevent griping.

**Dose.**— $\frac{1}{2}$  to 3 minims = 0·03 to 0·18 c.c.

**Official in U.S.**

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**Not Official.****COTO.**

A Bark from Bolivia—origin unknown.

**Medicinal Properties.**—Aromatic stimulant and intestinal astringent. Has been used in chronic diarrhoea.

It contains a bitter principle, **Cotoin**, sparingly soluble in Water, soluble in Alcohol, dose,  $\frac{1}{2}$  to 2 grains = 0·03 to 0·13 gramme.

**Official in Dutch Supp.**

Cotoin is recommended as checking the night sweats of phthisis.—L. '96, i. 255.

**Paracotoin** is obtained from an allied bark, which has similar properties; sparingly soluble in Water, soluble in Alcohol.

**Dose.**—2 to 3 grains = 0·13 to 0·2 gramme.

**TINCTURA COTO (B.P.C.).**—1 of bruised Coto Bark macerated with Alcohol (90 p.c.) to make 10.

**Dose.**—10 to 30 minims = 0·6 to 1·8 c.c.

Fluid extract (1 in 1), dose, 5 to 20 minims.

**FORTOIN** (Methylene-Dicotoin).—Yellow, crystalline needles, or a light yellow powder. Insoluble in Water, soluble in Chloroform and Acetone. Decomposed by Alkalies. Introduced as an intestinal antiseptic. Has been found useful in infantile diarrhoea.—*P.J.* '99, ii. 168; '01, i. 702.

**Dose.**—1 to 5 grains = 0·06 to 0·32 grammes.

## CREOSOTUM.

### CREOSOTE.

A colourless, or more generally a pale yellowish, highly refractive, oily liquid, possessing a strong characteristic odour, and a burning, caustic taste. It is a mixture of Guaiacol, Creosol and other Phenols; obtained in the distillation of Wood Tar.

It preserves animal substances from decay, from which property its name is derived. It is to the presence of this substance that the process of smoking hams owes its efficacy.

The two chief constituents of Creosote are **Guaiacol** and **Creosol**, the first of which predominates in some specimens and the second in others. Beechwood Creosote contains most Guaiacol; formerly it was stated to contain more than 60 p.c., but when the demand for Guaiacol and its salts arose, the proportion in commercial Creosote dropped to 20 p.c. It can now be obtained containing 50 p.c.

Kebler finds commercial Creosote to contain from 0 to 16 p.c. Guaiacol.—*P.J.* '99, ii. 65.

Guaiacol is soluble 1 in 80 of Water, and mixes with Glycerin in all proportions. Creosol is soluble 1 in 150 of Water, and will not form a clear mixture with Glycerin in any proportion.

**Solubility.**—Beechwood Creosote is soluble about 1 in 110 of Water and mixes in all proportions with Alcohol (90 p.c.), Absolute Alcohol, Ether sp. gr. 0·735 and 0·720, Glacial Acetic Acid, Chloroform, Benzol, and Petroleum Spirit; it also mixes with Glycerin in all proportions up to nearly 3 of Glycerin to 1 of Creosote, but on the further addition of Glycerin the mixture is turbid.

'English Creosote' differs from Beechwood Creosote in that it is not nearly so soluble in Water, and does not mix readily with Glycerin. It dissolves about 1 in 350 of Water, and forms a turbid mixture with an equal volume of Glycerin.

**Medicinal Properties.**—Disinfectant and antiseptic. It resembles Carbolic Acid in action, but it is less poisonous. Given internally in gastric fermentation, in putrefactive diarrhoea, and in phthisis with abundant fetid sputum (*see below*); for arresting nausea in hysteria, for obstinate sea-

sickness, and the vomiting of pregnancy and phthisis. A lotion (8 minims to 1 oz.) and the ointment are used for eruptions of a scaly character, for venereal ulcers, and in parasitic skin diseases; it relieves the itching in eczema; toothache, when depending on caries, is relieved by its application. As an inhalation in fetid bronchitis, phthisis and pulmonary gangrene.

Employed by internal administration with considerable success in phthisis, commencing with 5 minims in 2 fl. dram. of Cod-liver Oil three times daily after meals and gradually increasing till at the end of three or four weeks 30 to 60 minims or even 80 minims are being taken three times daily. It is said to have no tendency to bad effects even in such large doses. Should a patient be unable to take Cod-liver Oil, the Creosote may then be prescribed in spirituous solution. If the best Beechwood Creosote be used and due care exercised in increasing the dose gradually, it will be found to produce good results without unpleasantness or risk.—*B.M.J.* '98, i. 144, 299, 1383.

One drop of Creosote at bedtime every night for juvenile incontinence of urine.—*B.M.J.* '87, i. 809. In diabetes 4 drops daily increased to 10 drops.—*L.* '89, i. 702. Intratracheal injection of Creosoted Oil (1 in 20) to aid the expulsion of false membrane after tracheotomy.—*B.M.J.* '98, i. 1381.

Successful in cases of tuberculosis in children by pills and drops.—*T.G.* '93, 766.

Hypodermic injection of Creosote and Guaiacol dissolved in sterilised Almond Oil, 1 in 5 or 1 in 15.—*L.* '96, ii. 371; *B.M.J.* '95, ii. 1488. Small doses in gastric affections.—*L.* '97, ii. 404. In habitual constipation.—*L.* '97, ii. 932. Enemata containing 8 minims of Creosote in 4 oz. of Cod-liver Oil in pleuro-peritoneal tuberculosis in children.—*L.* '97, i. 159. In malarial enteric fever 15 minims rubbed into the axilla and covered up with cotton wool produced free perspiration and lowered the temperature.—*B.M.J.* '96, i. 18; '97, i. 1332; *I.M.G.* '96, 11; *T.G.* '96, 325.

Subcutaneous injection the best means of administering large quantities.—*B.M.J.* '01, ii. 219.

**Dose.**—1 to 5 minims = 0·06 to 0·3 c.c.

*Ph. Ger.* maximum single dose, 0·5 grammie; maximum daily dose, 1·5 grammie.

**Prescribing Notes.**—Given in capsules or in pills made with Soap and Liquorice Powder (see p. 236). When given as a draught or mixture it is best emulsified with Mucilage of Gum Acacia and given in Milk, or dissolved in Almond Oil; see 'Guttæ Creosoti' and 'Mistura Creosoti' (Squire). For Hypodermic injection, alone or dissolved in Almond Oil. When mixed with Magnesia it forms a tasteless compound insoluble in Water. Orange, Juniper, and Fluid Extract of Liquorice have been used as flavouring agents.

**Incompatibles.**—When prescribed in pills with Silver Oxide it explodes, unless previously diluted with some inert powder, such as Liquorice Root.

**Official Preparations.**—*Mistura Creosoti, Unguentum Creosoti.*

Capsules of Creosote and Balsam of Tolu are Official in Dutch Supp.

**Not Official.**—*Elixir Créosoté, Guttæ Creosoti, Mistura Creosoti (Squire), Pilula Creosoti, Solutio Creosoti Composita, Unguentum Creosoti Forte, Vapor Creosoti, Creosoti Carbonas, Creosoti Oleas, Creosoti Phosphas, Creosoti Tannas, Creosoti Valerianas, Salocreol, Taphosote, Phosphotal, and Pneumin,* The preparations of Guaiacol will be found under that name.

Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.

#### **MISTURA CREOSOTI. CREOSOTE MIXTURE.**

Shake 16 minims of Creosote with 14 fl. oz. of Distilled Water; add 1 fl. oz. of Syrup and 16 minims of Spirit of Juniper, and Distilled Water, *q.s.* to yield 16 fl. oz.

(about 1 in 480)

It was pointed out in the *Companion*, that Glacial Acetic Acid was quite unnecessary, and it is now omitted.

**Dose.**— $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 c.c.

#### **UNGUENTUM CREOSOTI. CREOSOTE OINTMENT.**

Creosote (by weight), 1; Hard Paraffin, 4; Soft Paraffin, white, 5; add the Creosote to the melted Paraffins, and stir until cold. (about 1 in 10)

Now made with Hard and Soft Paraffins in place of Simple Ointment.

#### **Not Official.**

**ELIXIR CRÉOSOTE' (Fr.).**—Creosote, 15; Rum, 985; mix and filter.

**GUTTÆ CREOSOTI (Squire).**—Creosote, 16 minims; Mucilage of Gum Acacia, 60 minims; Syrup of Orange, 1 fl. oz.; Water, to 2 fl. oz.; mix the Creosote with the Mucilage and add the other ingredients. One or two teaspoonfuls for a dose in an ounce of milk.

**MISTURA CREOSOTI (Squire).**—Creosote, 16 minims; Almond Oil,  $\frac{1}{2}$  fl. oz.; Syrup of Orange, 1 fl. oz.; Powdered Gum Acacia,  $1\frac{1}{2}$  drm.; Water, to 8 fl. oz. Dissolve the Creosote in the Oil, mix it with the Powdered Gum Acacia in a mortar; add all at once 3 fl. drm. of Water, and triturate until an emulsion is formed, then add the remainder of the Water and the Syrup of Orange.

**Dose.**— $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 c.c.

**PILULA CREOSOTI.**—Creosote, 12 minims; Curd Soap, in powder, 6 grains; Liquorice, in powder, 30 grains; mix, and divide into 12 pills.

**SOLUTIO CREOSOTI COMPOSITA.**—Creosote, 1; Spirit of Menthol (20 p.c.), 1; and Spirit of Chloroform, 1.—*Consumption*. Useful in an *oro-nasal inhaler*.

**UNGUENTUM CREOSOTI FORTE.**—Creosote, 6 fl. dram.; White Wax, 180 grains.—*British Skin*.

**VAPOR CREOSOTI.**—Creosote, 80 minims; French Chalk, 30 grains; Water, to 1 oz. A teaspoonful in 20 oz. of Water at 140° F. for each inhalation.—*Throat*.

**CREOSOTI CARBONAS** (Creosotal).—A viscid, amber-coloured liquid, nearly odourless and tasteless; insoluble in Water. Not only useful in chronic diseases of the lung, but in acute diseases of the respiratory organs. It is stated to contain 90 p.c. of Creosote, and to be free from the irritating effects of that substance.—*B.M.J.E.* '96, i. 15; *L.* '97, ii. 1472.

One teaspoonful doses for adults, smaller doses for children.—*L.* '98, i. 222; this dose has been criticised and 5 drops three times daily recommended.—*L.* '98, i. 960.

Is preferable to the phosphate, though both are better than pure Creosote.—*B.M.J.* '01, ii. 219.

Teaspoonful doses morning and night, taken in a cup of hot sugared Milk in the treatment of acute broncho-pulmonary affections. The dosage for children is proportionately smaller. Has remarkable power of reducing temperature in bronchitis and pneumonia, and is beneficial even in advanced pneumonia. Administration best stopped gradually.—*L.* '99, ii. 710; *B.M.J.E.* '02, i. 4.

#### Official in Dutch Supp.

**CREOSOTI OLEAS** (Oleocreosote).—A light yellow, oily liquid, having a faint odour and taste of Creosote. Insoluble in Water, soluble in Absolute Alcohol and in Ether.

**Dose.**—15 to 30 grains = 1 to 2 grammes.

**CREOSOTI PHOSPHAS** (Phosphate).—A dense, oily substance, insoluble in Water.

**Dose.**—5 to 15 grains in capsules = 0·32 to 1 gramme.

**CREOSOTI TANNAS** (Tannosal).—A brown, hygroscopic powder, soluble in Water, in Alcohol (90 p.c.) and in Glycerin.

**Dose.**—5 to 15 grains = 0·32 to 1 gramme.

**CREOSOTI VALERIANAS** (Eosote).—A yellow, oily liquid, distilling at 240° C., insoluble in Water, soluble in Alcohol (90 p.c.) and in Ether. Has been recommended as a substitute for Creosote on account of its freedom from corrosive and toxic properties. Commencing dose 3 grains, increasing to 6 or 9 grains three times a day, given in capsules.—*B.M.J.E.* '96, ii. 59.

**SALOCREOL** (Creosote Salicylic Ester).—A brown oily neutral liquid, insoluble in Water, readily soluble in Alcohol (90 p.c.), in Ether and in Chloroform. It has been used in the treatment of rheumatic swelling of the joints.—*B.M.J.E.* '03, ii. 52.

**Dose.**—6 to 20 grammes rubbed into the skin.

**Taphosote**, the Tannophosphoric Ester, and **Phosphotal**, the phosphite, are combinations of Phosphoric Acid and Creosote.

**Pneumin**, a compound of Creosote and Formaldehyde, is a yellow, tasteless, odourless powder. Insoluble in Water. Stated to have beneficial effect in tuberculosis.

**Dose.**— $7\frac{1}{2}$  to 30 grains = 0·5 to 2 grammes.

## CRETA PRÆPARATA.

### PREPARED CHALK.

Native Calcium Carbonate, freed from most of its impurities by elutriation.

**Solubility.**—Insoluble in Water, readily dissolved by weak acids.

**Medicinal Properties.**—It is astringent and antacid. Combined with other astringents and aromatics, it is used in infantile diarrhoea and in diarrhoea accompanied with acidity. One of the best antidotes for Oxalic Acid, the mineral acids, and Zinc Chloride. Used externally to burns, ulcers, and eczema, as a protective and desiccant.

**Dose.**—10 to 60 grains = 0·65 to 4 grammes.

**Prescribing Notes.**—Generally given in the form of *Mistura Cretæ with astringent Tinctures and Opium*.

*The Pulvis Cretæ Aromaticus* is useful for administration to children, either in powder or in mixture with Mucilage.

**Incompatibles.**—All Acids and Sulphates.

**Official Preparations.**—*Mistura Cretæ*, *Pulvis Cretæ Aromaticus* and *Pulvis Cretæ Aromaticus cum Opio*. Contained in *Hydrargyrum cum Cretâ*.

**Not Official.**—Cholera Mixture and *Unguentum Cretæ*.

**Official in Austr., Belg., Fr., Hung., Port., Span. and U.S.**

### MISTURA CRETÆ. CHALK MIXTURE.

Prepared Chalk,  $\frac{1}{4}$  oz.; Tragacanth, in powder, 15 grains; Refined Sugar,  $\frac{1}{2}$  oz.; Cinnamon Water, q.s. to make 8 fl. oz.  
(about 1 in 32)

Tragacanth is now used in place of Gum Acacia, and Sugar in place of Syrup.

**Dose.**— $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 c.c.

**Official in Port., Carbonate of Lime 3, Gum Arabic 3, Syrup of Cinnamon 10, Water 84; U.S., Prepared Chalk 6, Acacia 4, Sugar 10, Cinnamon Water 40, Water to measure 100.**

### PULVIS CRETÆ AROMATICUS. AROMATIC POWDER OF CHALK.

Prepared Chalk, 11 ; Cinnamon, 4 ; Nutmeg, 3 ; Cloves,  $1\frac{1}{2}$  ; Cardamom Seeds, 1 ; Refined Sugar, 25 ; all in powder.  
 (about 1 Chalk in  $4\frac{1}{7}$ )

Saffron is now omitted.

**Dose.**—10 to 60 grains = 0·65 to 4 grammes.

**PULVIS CRETÆ AROMATICUS CUM OPIO.** AROMATIC POWDER OF CHALK WITH OPIUM.

Aromatic Powder of Chalk, 39 ; Opium, in powder, 1.

(1 Opium in 40)

**Dose.**—10 to 40 grains = 0·65 to 2·6 grammes.

Not Official.

**CHOLERA MIXTURE.**—Aromatic Powder (B.P. '64), 3 drm. ; Spirit of Sal Volatile, 3 fl. drm. ; Tincture of Catechu, 10 fl. drm. ; Compound Tincture of Cardamoms, 6 fl. drm. ; Tincture of Opium, 1 fl. drm. ; Chalk Mixture, to make 20 fl. oz.

**Dose.**—1 fl. oz. = 28·4 c.c. for an adult,  $\frac{1}{2}$  fl. oz. = 14·2 c.c. for a child twelve years old,  $\frac{1}{4}$  fl. oz. = 7·1 c.c. for seven years old, after each liquid motion.

**UNGUENTUM CRETÆ.**—Prepared Chalk, 1 ; Spermaceti Ointment, 4 ; mix.

## CROCUS.

### SAFFRON.

The dried Stigmas and tops of the Styles of *Crocus sativus*. Imported from Spain, Franco and Italy.

**Medicinal Properties.**—Useful for giving colour and flavour to preparations.

**Official Preparation.**—Tinctura Croci. Used in the preparation of Decoctum Aloes Compositum and Tinctura Cinchonæ Composita.

**Not Official.**—Glycerinum Croci in place of Syrupus Croci.

**Official** in all the Foreign Pharmacopeias ; Fr., Safran ; Ital., Zafferano ; Mex., Azafran.

### TINCTURA CROCI. TINCTURE OF SAFFRON.

1 of Saffron, macerated with 20 of Alcohol (60 p.c.).

(1 in 20)

**Dose.**—5 to 15 minims = 0·3 to 0·9 c.c.

**Official** in Belg. and Span., 1 in 5 ; Dutch, Fr., Swiss and U.S., 1 in 10 ; all by weight except U.S.

Not Official.

**GLYCERINUM CROCI.**—Saffron, 1 ; Glycerin, 20 ; Alcohol (60 p.c.), 20 ; mix the Glycerin and the Alcohol, and digest in it the

Saffron for an hour at a gentle heat, and filter. This is introduced as a substitute for **Syrupus Croci**, which deposits and loses its colour. The Syrup can be prepared by diluting 1 of Glycerinum with 7 of simple Syrup.

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## CROTONIS OLEUM.

### CROTON OIL.

The Oil expressed from the seeds of *Croton Tiglum*.

A native of Hindostan, Ceylon and the Moluccas.

100 of seed yield about 50 of Oil.

**Solubility.**—Soluble in Ether, Oil of Turpentine and Olive Oil, partially soluble in Alcohol (90 p.c.).

**Medicinal Properties.**—A powerful drastic cathartic, acting with great rapidity. Given in cases of obstinate constipation, in dropsy, in apoplexy, in maniacal and unconscious patients and in eclampsia, its small dose being an advantage. Applied externally as a powerful counter-irritant in rheumatism, gout, neuralgia, and in acute laryngeal and pulmonary diseases in the form of liniment. Its external application is often followed by an eruption which becomes pustular.

Croton oil must be given with great care, and is inadmissible in feeble subjects, in organic obstruction, and in inflammatory states of the stomach and intestines.—*Mitchell Bruce*.

5 minims to 1 fl. oz. of Olive Oil are used to promote the growth of hair.

**Dose.**— $\frac{1}{2}$  to 1 minim = 0.03 to 0.06 c.c.

*Ph. Ger.* maximum single dose, 0.05 gramme; maximum daily dose, 0.15 gramme.

**Prescribing Note.**—In pill with Soap and Liquorice Powder (see p. 482), or in combination with Compound Extract of Colocynth.

**Official Preparation.**—Linimentum Crotonis.

**Not Official.**—Croton Oil Pencils, and Collodium Tiglia.

**Antidotes.**—In case of an overdose an emetic should be at once administered, the stomach should be washed out with Olive Oil or Milk, 4 fl. oz. to pint of Water; mucilaginous fluids and Opium or Morphine should then be given to check the pain and enteritis.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.** Swed. has also an Oleum Crotonis Extractum.

**LINIMENTUM CROTONIS. LINIMENT OF CROTON OIL.**

Croton Oil, 1; Oil of Cajuput, 3½; Alcohol (90 p.c.), 3½.

(1 in 8)

*Consumption* and *St. Mary's* have a diluted liniment made with equal parts of the Official Preparation and Liniment of Soap.

#### Not Official.

**CROTON OIL PENCILS.**—Croton Oil 2, Cacao Butter 1, White Beeswax 1; melt together the last two in a water-bath, add the Oil, and when nearly cold pour into moulds.

**COLLODIUM TIGLII (U.S.N.F.).**—Croton Oil, 1; Flexile Colloidion, 9.

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## CUBEBAE FRUCTUS.

### CUBEBS.

The dried, full-grown, unripe Fruits of *Piper Cubeba*.

**Medicinal Properties.**—Aromatic, stimulant and antiseptic diuretic. Acts specially on the genito-urinary mucous membrane. Given in all stages of gonorrhœa, gleet, cystitis, pyelitis, and sometimes in chronic bronchitis. Frequently combined with Copaiaba.

**Dose.**—30 to 60 grains = 2 to 4 grammes.

**Prescribing Notes.**—The Powder is given in the above doses wrapped in moistened Wafer-paper, or in smaller doses in **cachets**. In mixture well rubbed down with Mucilage. A popular form of administration is the **paste**, made with an equal quantity of Copaiaba, which may be taken in Wafer-paper. It is also made into a paste with Glycerin and various Syrups. For throat affections Lozenges, Compressed Tablets, and Cigarettes are made. It is also given in the form of Vapour.

The Oil is given in Capsules or suspended in Water with Mucilage.

For Inhalation the Oil may be used with or without the vapour of Water.

**Official Preparations.**—*Oleum Cubebæ* and *Tinctura Cubebæ*.

**Not Official.**—*Extractum Cubebæ Fluidum*, *Oleo-resina Cubebæ*, *Gossypium Cubebæ*, *Trochiscus Cubebæ*, and *Vapor Cubebæ*.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

### OLEUM CUBEBAE. OIL OF CUBEBS.

A viscid, oily liquid, possessing a characteristic odour and a warm camphoraceous taste.

B.P. describes it as colourless, pale-green, or greenish-yellow; Schimmel, as light green or bluish-green; it is colourless only when the last portions of the distillation, which are blue, have not been added to the product.

Sp. gr. 0·910 to 0·930. It is distilled from Cubebs, the yield being from 10 to 18 p.c.

**Solubility.**—1 in 18 of Alcohol (90 p.c.), in all proportions of Absolute Alcohol.

**Dose.**—5 to 20 minimis = 0·3 to 1·2 c.c.

Official in Port., Span. and U.S.

**TINCTURA CUBEBAE.** TINCTURE OF CUBEBS.

4 of Cubebs, percolated with Alcohol (90 p.c.), to yield 20. Now 1 in 5 instead of 1 in 8.

**Dose.**—½ to 1 fl. drm. = 1·8 to 3·6 c.c.

Official in Fr., 1 in 5, by weight; Mex. and U.S., 1 in 5.

**Not Official.**

**EXTRACTUM CUBEBAE FLUIDUM (U.S.).**—Cubebs in No. 60 Powder, 100 grammes, percolated with Alcohol (94 p.c. by vol.) until the Cubebs are exhausted, reserve the first 90 c.c. of percolate, and evaporate the remainder to a soft extract; dissolve this in the reserved portion, and add sufficient Alcohol to make 100 c.c.

**Dose.**—5 to 30 minimis = 0·3 to 1·8 c.c.

**OLEO-RESINA CUBEBAE.** *Syn.* EXTRACTUM CUBEBAE.—Percolate Cubebs in coarse powder with Ether, slowly, until the liquor passes colourless. Let the Ether evaporate from the liquor, at first spontaneously and then over a water-bath, or recover it by distillation; and transfer the residue to a closed vessel, letting it stand until waxy or crystalline matter ceases to be deposited. Decant the Oleo-Resin and preserve it in a well-stoppered bottle.

**Dose.**—5 to 30 minimis = 0·3 to 1·8 c.c.

Official in Dutch, Fr., Ger., Hung., Mex., Swiss and U.S.

**TROCHISCUS CUBEBAE.**—Each lozenge contains about  $\frac{1}{2}$  grain of Cubebs with Fruit Paste.—*Throat.*

Official in U.S., about  $\frac{1}{2}$  grain of Oleo-resin in each.

**VAPOR CUBEBAE.**—Oil of Cubebs 40 minimis, Light Magnesium Carbonate 20 grains, Water to 1 fl. oz. Mix. A teaspoonful in a pint of water at 140° F. for each inhalation.—*Throat.*

**VAPOR CUBEBAE CUM LIMONE.**—Oil of Cubebs, 30 minimis; Oil of Lemons, 10 minimis; Light Magnesium Carbonate, 20 grains; Water, to 1 oz.—*Throat.*

**CUCURBITÆ SEMINA PRÆPARATA.**

MELON PUMPKIN SEEDS.

The prepared fresh ripe seed of *Cucurbita maxima*, from culti-

vated plants, are Official in the *Ind.* and *Col. Add.*, for the Mediterranean Colonies.

**Dose.**—3 to 4 oz. = 85·2 to 113·6 grammes.

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### Not Official.

#### CUPRI SUBACETAS.

*Syn.*—ÆRUGO. VERDIGRIS.

Pale green powder, or partly crystalline masses.

When treated with Water about 50 p.c. dissolves as Copper Acetate, leaving an insoluble basic Acetate.

**Medicinal Properties.**—Used as a stimulant to foul and indolent ulcers, also as an escharotic.

**Official in Belg., Dan., Fr., Mex., Port. and Span.**

**LINIMENTUM ÆRUGINIS** (*Ph. Lond.*).—Made by dissolving Verdigris 1, in Vinegar 7, adding Honey 14, and boiling down to a proper consistence.

This preparation, with different proportions, also occurs in Belg., Fr., Ital., Port., Span. and Swiss. Most of them direct that the preparation shall be boiled until it assumes a red colour, which indicates that the Cupric Acetate has been reduced to a Cuprous compound.

**CUPRI ACETAS.**—Deep green, prismatic crystals.

**Solubility.**—1 in 15 of Water, 1 in 300 of Alcohol (90 p.c.), 1 in 112 of Glycerin.

**Medicinal Properties.**—Similar to the Subacetate, but more definite when required for solution in Water.

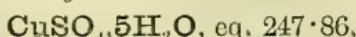
**Official in Dutch Supp. and Swiss.**

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#### CUPRI SULPHAS.

#### COPPER SULPHATE.

*B.P. Syn.*—CUPRIC SULPHATE.



, eq. 247·86.

Large translucent, blue, triclinic crystals, possessing a metallic and astringent taste. It slowly effloresces in dry air.

When rendered anhydrous by heating, the powder is white.

**Solubility.**—1 in  $3\frac{1}{2}$  of Water, 2 in 1 of Water (at 212° F.); insoluble in Alcohol (90 p.c.); 1 in  $2\frac{1}{2}$  of Glycerin.

Will not dissolve 1 in 2·75, as stated by some authoritics.—*P.J. '02, i. 553.*

**Medicinal Properties.**—Astringent, prompt emetic,

escharotic. Recommended in chronic diarrhoea, especially that of phthisis. Externally, as a styptic for bleeding surface; and a local stimulant to ulcers, as an escharotic for warts, etc. For lotions, in proportions from 2 to 4 grains to 1 oz.; also 8 grains to 1 oz. for prurigo. As an astringent injection to diminish excessive secretion from mucous membranes, especially in cases of leucorrhœa and gonorrhœa. For urethral injections, 1 to 4 grains in an oz. of Water. It is also used 1 to 2 grains to 1 oz. in granular conjunctivitis and various affections of the eyes when astringent applications are required. Also in some skin affections.

An antidote in Phosphorus poisoning—3 grains every few minutes till vomiting is produced.—*Mitchell Bruce*.

Copper Sulphate 10 grains, Tincture of Opium 60 minims, Water, 4 fl. oz. This was used as a rectal injection in a bad case of dysentery.—*L.* '89, ii. 739.

Recommendation of the Departmental Committee appointed to inquire into the use of preservatives and colouring matter in food. That the use of copper salts in the so-called greening of preserved food be prohibited.—*L.* '01, ii. 1683; *J.S.C.I.* '01, 1228.

**Dose.**—As an astringent,  $\frac{1}{4}$  to 2 grains = 0·016 to 0·13 grammie; as an emetic, 5 to 10 grains = 0·32 to 0·64 grammie.

*Ph. Ger.* maximum single dose, 1·0 grammie.

**Prescribing Notes.**—*Best given in form of pill. A good pill is prepared by adding  $\frac{1}{3}$  part of Pulvis Tragacanthæ Compositus, and Dispensing Syrup, q.s.; varnish if required.*

**Incompatibles.**—Alkalies and their Carbonates, Lime Water, Iodides, and most vegetable astringents.

**Not Official.**—Guttæ Cupri Sulphatis, Cupri Oleas, Unguentum Cupri Oleatis, Lapis Divinus (Cuprum Aluminatum) Fehling's Solution, Pavys Solution, Cuprargol, and Cupri Sulpho-Carbolas.

**Antidotes.**—In case of poisoning by Copper Sulphate, Albumen or White of Egg is the best antidote; the stomach should then be washed out, demulcent drinks given, followed by Laudanum internally or Morphine hypodermically, and Linseed Meal poultices applied to the abdomen.

**Official** in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital. (Solfato di Rame), Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S. Ger. has also a crude sulphate.

### Not Official.

**GUTTÆ CUPRI SULPHATIS.**—Copper Sulphate, 2 grains; Water, 1 fl. oz.—The strength in use at the principal Hospitals.—*London Ophthalmic.*

**CUPRI OLEAS.**—Green, oleaginous solid, insoluble in Water, soluble in Ether. An excellent antiseptic and antiparasitic agent. When diluted it is especially useful in ringworm.

**UNGUENTUM CUPRI OLEATIS.**—Copper Oleate, 1; Lard, 4; melt together, and stir till cold. Useful in ringworm, hard ana horny warts, corns and bunions.—*B.M.J.* '84, ii. 752.

1 to 7 of Soft Paraffin (*London*); 1 to 6·3 of Lard (*University*).

**LAPIS DIVINUS. CUPRUM ALUMINATUM.**—Copper Sulphate, Potassium Nitrate, and Alum, of each equal parts, in powder, fused in a glazed earthen crucible, powdered Camphor, to the extent of  $\frac{1}{10}$ th part of the whole, being added near the end of the process. When cold, break in pieces and keep in a closely stoppered bottle. An eye-wash may be made by dissolving 2 grains in 1 oz. of Distilled Water.

**Official** in Belg., Dutch Supp., Fr. (Pierre Divine), Ger., Hung., Jap., Russ., Span. and Swiss.

**FEHLING'S SOLUTION.**—(*Copper*) Copper Sulphate, in crystals, 34·64 grammes; Sulphuric Acid, 0·5 c.c.; Distilled Water, sufficient to produce 500 c.c. (*Alkaline Tartrate*) Sodium Potassium Tartrate, 176 grammes; Sodium Hydroxide, 77 grammes; Distilled Water, sufficient to produce 500 c.c. Mix the solutions in equal volumes at the time of using.

Fehling's solution is reduced by Chloroform, but not by Alcohol.

**PAVY'S SOLUTION.**—Crystallised Copper Sulphate, 34·65 grammes; Rochelle Salt, 170 grammes; Potassium Hydroxide, 170 grammes; Water, to 1000 c.c.

When 120 c.c. of this Solution are mixed with 400 c.c. of Ammonia (sp. gr. 0·880) and diluted to 1000 c.c., then 10 c.c. may be taken as equivalent to 0·005 gramme of Glucose.

The method is well adapted for the examination of Diabetic Urine and Milk, also mixtures of Milk and Cane Sugars, and certainly has the advantage over the ordinary Fehling method by its definite end reaction.

**CUPRARGOL** (*Copper and Silver Albuminate*).—A greyish-white powder, soluble in Water. Has been used in 1 to 5 p.c. solution in conjunctivitis.

**CUPRI SULPHOCARBOLAS** (*Copper Aseptol*).—Green rhombic prisms or light green needle-shaped crystals. Soluble in Water and in Alcohol (90 p.c.). Hæmostatic. As an antiseptic,  $\frac{1}{2}$  to 1 p.c. solution. As an injection in gonorrhœa,  $\frac{1}{4}$  to 1½ p.c. solution.

#### Not Official.

#### CURARA—WOORARA.

A powerful poison, stated to be obtained from various species of *Strychnos* and other sources, and used by the Indians in the northern part of South America for arming the points of their arrows. A brownish black, shining, brittle, resinous mass, almost wholly soluble in Water, sparingly soluble in Absolute Alcohol,

Different samples vary very much in strength, and no doubt also in general composition, so that the dose of every parcel has to be arrived at by experiment. It is only used hypodermically, and the solution 1 grain in 12 minims given in former editions of the *Companion* is now included in B.P.C. Formulary.

An alkaloid Curarine has been obtained from Curara, and although commercial, is somewhat difficult to obtain.

Arrow Poisons: Their history, sources and constituents.—(Stoekman) *P.J.* '98, ii. 548, 585.

**Medicinal Properties.**—It has been used in the treatment of hydrophobia and chorea.

Is strongly toxic when injected under the skin.

**Dose.**— $\frac{1}{2}$  to  $\frac{1}{2}$  grain = 0.005 to 0.032 grammes, but should be used with great care.

Official in Fr., Mex. (Curaro) and Span.

**INJECTIO CURARÆ HYPODERMICA (B.P.C.).**—Curare, 5 grains; powder and make it into a paste with Distilled Water; transfer to a funnel plugged with absorbent wool, and gradually pour upon it Distilled Water until one fluid drachm is obtained. If the injection be required in haste, rub the Curare with 60 minims of Distilled Water, throw on a filter, and when it ceases to drop, pour over the contents of the filter sufficient Distilled Water to produce 1 fl. dram.

**Dose.**—1 to 6 minims = 0.06 to 0.36 c.c.

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## CUSPARIÆ CORTEX.

### CUSPARIA BARK.

The dried Bark of *Cusparia febrifuga*.

The alkaloids, Cusparine, and Galipeine, have been extracted from Cusparia Bark. Cusparine Sulphate and Hydrochloride are slightly soluble in Water, the Acetate and Tartrate much more so.—*P.J.* (3) xiv. 423.

Contains about 1.5 p.c. of ethereal oil.—*J.C.S. Abs.* '98, i. 37.

**Medicinal Properties.**—An aromatic bitter tonic. In South America it is given for malarial fever.

**Prescribing Notes.**—Given in the form of the Infusion or the Concentrated Liquor, generally combined with Aromatics to prevent nausea.

**Official Preparations.**—Infusum Cuspariae and Liquor Cuspariae Concentratus.

Official in Belg., Fr., Mex., Port. and Span. (Angustura).

### INFUSUM CUSPARIÆ. INFUSION OF CUSPARIA.

Cusparia Bark, in No. 20 powder, 1; Distilled Water, boiling, 20; infuse for fifteen minutes; strain. (1 in 20)

**Dose.**—1 to 2 fl. oz. = 28·4 to 56·8 c.c.

**Incompatibles.**—Mineral Acids, Ferric Chloride, and other metallic salts.

**LIQUOR CUSPARIÆ CONCENTRATUS.** CONCENTRATED SOLUTION OF CUSPARIA.

10 of Cusparia Bark, in No. 40 powder, percolated with Alcohol (20 p.c.), to yield 20. (1 in 2)

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

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**CUSSO.**

**KOUSSO.**

The dried panicles of pistillate Flowers of *Brayera anthelmintica*.

Obtained from Abyssinia.

**Medicinal Properties.**—Anthelmintic. Especially useful for the different kinds of tapeworm. Should be followed by a purgative to expel the dead worm.

**Dose.**— $\frac{1}{4}$  to  $\frac{1}{2}$  oz. = 7·1 to 14·2 grammes.

**Prescribing Notes.**—The Flowers, in coarse powder, are mixed with half a pint of warm Water, allowed to stand for fifteen minutes, stirred up (not strained), and taken in 2 or 3 draughts at short intervals. It should be taken in the morning on an empty stomach, the bowels having previously acted. After three or four hours a brisk purgative should be administered. On account of its liability to produce nausea a little Lemonade may be taken afterwards.

Official in all the Foreign Pharmacopœias, except Dan.

The Infusion is Official in Fr. (Apozème de Cousso) about 1 in 8 ; Span. (Inf. de Couso), 1 in 11 $\frac{1}{2}$ .

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**Not Official.**

**CYDONIUM.**

**QUINCE SEED.**

The Seeds of *Pyrus Cydonia*.

Their coriaceous envelope abounds in mucilage.

**Medicinal Properties.**—Demulcent. The decoction is used externally for cracks in the skin. A nice adjunct to eye-lotions in cases of irritation and inflammation.

Official in Austr., Belg., Dutch Supp., Fr. (Coing), Port. (Marmelo), Mex. and Span. (Membrillo), and Swiss.

**DECOCTUM CYDONII.**—Quince Seed, 1; Distilled Water, 80. Boil for ten minutes, and strain.

**MUCILAGO CYDONII**, by cold maceration.—Austr., 1 in 25; Belg. and Port., 1 in 100; Dutch Supp. and Swiss, 1 in 50; Fr., 1 in 10; Span., 1 in 46.

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### Not Official.

#### CYNOGLOSSUM.

The Root of *Cynoglossum officinale*. It contains an amorphous alkaloid **Cynoglossine**.

**Medicinal Properties.**—Has been used as a demulcent and sedative.

Official in Dan., Fr. and Norw.

**Pulvis Cynoglossi Compositus** is Official in Dan., Fr. and Norw.

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### Not Official.

#### CYPRIPEDIUM.

The Rhizome and Roots of *Cypripedium Pubescens* and of *Cypripedium parviflorum* are Official in U.S. Commonly known as Ladies slipper.

**Cypripedin** is the dried extractive of the above and as a gentle nervous stimulant and antispasmodic it has been recommended in hypochondriasis, chorea and epilepsy.

The eclectic remedy "Cypripedin," which is stated to be prepared by precipitating a concentrated tincture of the root with water, is complex in composition and stated to have no claim to the name given it.

It may be used in doses of 1 to 5 grains = 0·065 to 0·32 grammes.

A 1 in 1 Fluid Extract is Official in the U.S., dose 5 to 15 minims = 0·3 to 0·9 c.c.

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### Not Official.

#### DAMIANA.

The Leaves of one or more species of *Turnera*, from Mexico and California.

Contains a bitter substance, resins, and a volatile oil.

**Medicinal Properties.**—Tonic, diuretic, and aphrodisiac.

**Prescribing Notes.**—Frequently given in the form of pill; the Hard Extract makes a good pill with a small quantity of Alcohol (90 p.c.), the Soft Extract is best hardened with the powdered Leaves. The Liquid Extract is given in capsules.

**EXTRACTUM DAMIANÆ LIQUIDUM.**—Damiana leaves exhausted

with Alcohol (60 p.c.); 1 of fluid represents 1 of the drug. This has been added to *B.P.C.*

**Dose.**—30 to 60 minims = 1·8 to 3·6 c.c.

**EXTRACTUM DAMIANÆ.**—The above evaporated to a soft extract.

**Dose.**—5 to 10 grains = 0·32 to 0·65 grammes.

## DIGITALIS FOLIA.

### DIGITALIS LEAVES.

The dried Leaves of *Digitalis purpurea*. Collected from plants commencing to flower.

**Medicinal Properties.**—Cardiac and circulatory stimulant and tonic, increases the strength and efficiency of the cardiac contractions, and reduces the pulse rate without diminishing tension. Specially useful in mitral and tricuspid lesions with loss of compensation; in cardiac insufficiency from whatever cause, with irregular and rapid action and low arterial tension; not indicated in purely aortic cases. Of great value as a cardiac stimulant in acute pneumonia; useful in pulmonary haemorrhage due to mitral disease. Diuretic, useful in cardiac dropsy; also in renal dropsy when acute or when due to failure of a hypertrophied heart.

It is cumulative in action, and requires watchfulness. Its continued use deranges the alimentary system; therefore, after it has been taken for eight or ten days it should be left off for three or four days and then recommenced. According to Lauder Brunton, Digitalis is distinctly dangerous in advanced fatty degeneration of the heart; he also thinks it harmful in advanced Bright's disease. For a comparison with Strophanthus see under *Strophanthi Semina*.

The pharmacology of the glucosides of Digitalis does not appear to have advanced sufficiently to enable them to supplant the galenical preparations of the drug; excepting the Fr. Supp., which contains 'granules' and 'solutions' of the crystalline Digitalin, described in Codex, 1884, no recent Pharmacopœia includes a description of Digitalin.

According to Kiliani the seeds of *Digitalis purpurea* contain Digitalinum verum, and Digitonin; the leaves contain Digitoxin, but neither of the other two. Preparation of Digitalin also described.—*J.C.S. Abs.* '96, i. 58, 59, 180; '97, i. 95; *P.J.* '95, ii. 29, 120; '96, ii. 289.

Treatment of pneumonia by Digitalis.—*B.M.J.E.* '95, ii. 32; '96, ii. 76; '97, i. 15.

Digitoxin in doses of  $\frac{1}{4}$  milligramme =  $\frac{1}{260}$  grain.—*B.M.J.E.* '97, i. 31.

Best administered as tincture or dried leaf in pill form, one advantage being combination of active principles whereby over-action is obviated.—*L.* '02, i. 673.

Untoward effects of 20 to 24 minims of the tincture taken daily for five days in a weakly overgrown boy of 10 years.—*B.M.J.E.* '02, i. 1068.

The administration of Digitalis particularly deprecated in unduly high pressure of the heart.—*B.M.J.* '99, i. 85.

In the treatment of the rapid heart of influenza, where there is cardiac dilatation that lasts some weeks. Intermittent administration best. 10 to 20 minims of Tincture,  $\frac{1}{2}$  dram. of the Infusion or 1 grain Powdered Leaves, thrice daily for three days with intervals of three or more days during which the drug is withheld, or 2 to 4 granules of Nativelle's Digitalin containing  $\frac{1}{10}$  milligramme once in twenty-four hours for two days with intervals of at least three days.—*L.* '99, ii. 1079.

Some remarks upon Digitalis treatment in chronic disorders of the circulation, and especially upon the continuous use of Digitalis.—*Pr. lxiv.* 385.

An experimental investigation into the treatment of Digitalis poisoning. Nitroglycerin, besides possessing a greater antagonistic action to Digitalis than any other known drug, is also relatively non-toxic, and for the reduction of internal tension Nitroglycerin or an ally is the best remedy, but with a low blood pressure these substances are useless.—*B.M.J.* '99, ii. 1265.

Influence on the heart muscle when administered for a long period of time.—*T.G.* '97, 800.

**Dose.**—In powder  $\frac{1}{2}$  to 2 grains = 0·032 to 0·13 grammes.

*Ph. Ger.* maximum single dose, 0·2 gramme; maximum daily dose, 1·0 gramme.

**Prescribing Notes.**—*The fresh Infusion is preferred by some to the Tincture. The powdered leaf is ordered in Pills with other ingredients. Ferrous Sulphate is not uncommonly prescribed with the fluid preparation of Digitalis, with a resulting blackening from the tannin of Digitalis; where this is an objection it can be prevented by the addition of Citric Acid: 6 grains of Citric Acid are sufficient for 12 grains of Ferrous Sulphate; or the powdered drugs can be given in pills.*

**Incompatibles.**—Ferrous Sulphate, Tincture of Ferric Chloride, preparations of Cinchona, and Lead Acetate.

**Official Preparations.**—Infusum Digitalis and Tinctura Digitalis.

**Not Official.**—Extractum Digitalis Fluidum, Infusum Digitalis Concentratum, Pilula Digitalis Composita, Succus Digitalis, and Digitalin (various).

**Antidotes.**—In case of an overdose, a recumbent posture is of paramount importance; and after the stomach has been emptied, 20 grains of Tannic Acid in hot Water given frequently, or hot

strong tea or coffee; stimulants and warmth should be employed.

**Official** in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.

The more or less definite principles contained in Digitalis may be arranged as follows under the names applied to them by Schmiedeberg, and the important references connected with the subject are *P.J.* (3) v. 741; (3) xvii. 163, 871; (3) xx. 503; (3) xxii. 694:—

- (a) **Digitonin.** — A crystallisable body resembling Saponin, constituting the larger part of the glucosidal constituents. Soluble in Water, insoluble in cold Alcohol, Ether, Benzol, or Chloroform. It has none of the physiological action peculiar to Digitalis, and in other respects is directly injurious.
- (b) **Digitalein.** — An amorphous glucoside (possibly a mixture). Soluble in Water and in Alcohol, insoluble in Ether or Chloroform. Its action on the heart is non-cumulative, and it causes no irritation when subcutaneously injected.
- (c) **Digitalin.** — A granular (if not crystalline) glucoside, soluble in Alcohol, almost insoluble in Water, sparingly soluble in Ether or Chloroform.  
Possesses in a high degree the medicinal action of Digitalis.
- (d) **Digitoxin.** — Crystalline. Easily soluble in Alcohol, slowly in Chloroform, very sparingly in Ether, quite insoluble in Water.  
The most toxic of all the constituents, but uncertain, cumulative and dangerous in its action.
- (e) **Digitin.** — A crystalline body, physiologically inert, difficultly soluble in Water, more readily in Alcohol, insoluble in Ether or Chloroform.

#### **INFUSUM DIGITALIS. INFUSION OF DIGITALIS.**

Digitalis Leaves, in No. 20 powder, 60 grains; boiling Distilled Water, 20 fl. oz. Infuse fifteen minutes; strain.

Formerly made 56 grains to the pint.

**Dose.**—2 to 4 fl. dram. = 7·1 to 14·2 c.c.

1 fl. oz. represents 3 grains of Leaves.

**Official** in Dutch, Mex. and Port., 1 in 200; Span., 1 in 345; Swed., 1 in 100; U.S., with Cinnamon, 3 in 200.

#### **TINCTURA DIGITALIS. TINCTURE OF DIGITALIS.**

2½ of Digitalis Leaves, percolated with Alcohol (60 p.c.) to yield 20. (1 in 8)

**Dose.**—5 to 15 minims = 0·3 to 0·9 c.c.

*Ph. Ger.* maximum single dose, 1·5 grammes; maximum daily dose, 5·0 grammes, of the 1 and 10 Tincture.

Larger doses are occasionally given, but, according to some observers, the results with small doses are equally good and not nearly so dangerous.

In cases of delirium tremens, 1 fl. dram. every three hours. Two or even three fl. dram. in cases carefully watched.—*Pr. xxvii.* 373.

**Official in** Austr., Russ. and Swiss, 1 in 10; Dan., Dutch, Ger., Ital., Jap., Norw. and Swed., 1 and 10; Belg., Fr., Hung., Port. and Span., 1 in 5; U.S., 15 in 100. Also Belg., Fr., Port. and Span., 1 fresh Leaves, 1 Spirit; Fr., with Ether, 1 dried Leaves in 5; Dan. and Port., with Spirit of Ether, 1 dried Leaves in 10; Mex., Seeds 1 in 5; also Ethereal Tincture 1 and 5. All by weight except U.S.

#### Not Official.

**EXTRACTUM DIGITALIS FLUIDUM (U.S.).**—A 1 in 1 fluid extract prepared by exhausting the Leaves with a mixture of Alcohol (94 p.c.) 2, Water 1. Dose, 1 to 2 minims = 0·06 to 0·12 c.c.

**Official in** Dan., Swiss and U.S.

**INFUSUM DIGITALIS CONCENTRATUM (B.P.C.).**—Digitalis Leaves, 1; Alcohol (90 p.c.), 5; Water, q.s. to produce 20.

An infusion prepared by a process of triple maceration.

**Dose.**—15 to 30 minims = 0·9 to 1·8 c.c.

**PILULA DIGITALIS COMPOSITA.**—Digitalis Powder,  $\frac{1}{2}$  grain; Squill, 1 grain; Mercury Pill, 2 grains; in one pill.—*St. George's.*

**SUCCUS DIGITALIS.**—The Expressed Juice, 3; Alcohol (90 p.c.), 1.

This preparation may be given for a longer period than the Tincture without causing nausea. This has been added to *B.P.C.*

**Dose.**—5 to 10 minims = 0·3 to 0·6 c.c.

**DIGITALIN.**—Under this name four distinct varieties occur in commerce, which differ so considerably in their medicinal properties that prescribers should be careful to distinguish and specify the kind intended. All four of them are soluble in Alcohol.

1. **Digitalin Amorphous (Homolle).**—Stated to consist mainly of Digitalin with some Digitoxin.

Soluble in Chloroform, slightly soluble in Water.

**Official in** Belg., Dutch Supp., Fr., Port. and Span.; formerly in Brit.

2. **Digitalin Crystallised (Nativelle).**—Stated to consist almost entirely of Digitoxin.

Soluble in Chloroform, insoluble in Water.

**Official in** Fr., Mex. and Span.

Granules de Digitaline Cristallisée (Fr. Supp.) contains  $\frac{1}{5}$  milligramme in each granule. Soluté Officinal de Digitaline Cristallisée au Millième contains 1 milligramme in each gramme.

3. **Digitalin German.**—Amorphous; consists principally of Digitalein with some Digitonin and Digitalin.  
Readily soluble in Water, almost insoluble in Chloroform.
4. **Digitalin Verum.**—Kiliani (*P.J.* (3) xxii. 1061) states, with some show of reason, that the Digitalin of Schmiedeberg is the best form in which to prescribe Digitalis, and to distinguish it he applies the name Digitalin Verum. Its composition is definite; it is obtainable commercially in a sufficiently pure condition; it possesses all the medicinal activity in regard to the action of Digitalis upon the heart; it is non-cumulative in its action; the dose is  $\frac{1}{4}$  milligramme ( $\frac{1}{2}\frac{1}{10}$  grain) every 2 or 3 hours; it is soluble about 1 in 1000 of Water, about 1 in 100 of Alcohol (50 p.c.). The aqueous solution froths upon being shaken, and is remarkably prone to become mouldy.

Not Official.

### DUBOISIA MYOPOROIDES.

A plant indigenous to N.S. Wales and Queensland; it has been classed in the order *Solanaceæ*.

Ringer's experiments show that the physiological action of the extract is apparently identical with that of Atropine. Tweedy has used it as an application to the eye in all cases in which Atropine is indicated.

**Official in Span.**

**Duboisine Sulphate** is an amorphous hygroscopic powder, very soluble in Water. **Official in Dutch and Mex.**

The name **Duboisine** should be once and for all abandoned, as it only represents a variable product obtained from a particular plant. Pseudo-hyoscyamine from *Duboisia myoporoidea*, isomeric with Atropine and Hyoscyamine, has been described by Merck.—*P.J.* '98, ii. 195.

Not Official.

### DUGONG OIL.

An Oil obtained in Australia from *Halicore australis* and *H. Dugong* by boiling the superficial fat. A substitute for Cod-Liver Oil, recommended at one time (*P.J.* (3) iii. 100) as not being disagreeable in taste, but it does not possess this character now.

Not Official.

### DULCAMARA.

The dried young Branches of *Solanum Dulcamara* (Bittersweet), from indigenous plants which have shed their leaves.

**Medicinal Properties.**—Alterative, analgesic and narcotic of feeble power. Used in cutaneous eruptions, chiefly of a scaly nature, as psoriasis and pityriasis, a decoction being applied externally, at the same time that it is used internally. Also in chronic rheumatism and pulmonary catarrh.

An alkaloid **Solanine** obtained from *Solanum nigrum*, *S. Dulcamara*, and *S. tuberosum* (Potato plant), has been recommended as an analgesic.—*L.M.R.* '86, 496; '88, 242; *T.G.* '87, 56; '88, 630; *L.* '87, ii. 1097.

Official in Austr., Belg., Fr., Mex., Port., Span., Swiss and U.S.

**EXTRACTUM DULCAMARÆ FLUIDUM (U.S.).**

1 fl. oz. equals 1 oz. Dulcamara. Prepared with Diluted Alcohol.

Dose.—30 to 60 minims = 1·8 to 3·6 c.c.

A solid **Extractum Dulcamaræ** is Official in Dutch Supp.

**INFUSUM DULCAMARÆ.**

Dulcamara, 1; boiling Water, 10; infuse one hour.

Dose.—1 to 2 fl. oz. = 28·4 to 56·8 c.c.

Official in Fr. (Tisane), 1 in 50.

## ELATERIUM.

### ELATERIUM.

A sediment from the juice of the Fruit of *Ecballium Elaterium*.

'Extractum Elaterii' was the official synonym in B.P. '85 for Elaterium.

**Medicinal Properties.**—The most powerful hydragogue cathartic, only used in special cases. Employed in dropsical affections connected with cardiac or renal disease and in cerebral congestion. Its administration in a debilitated state of the system or in gastro-intestinal inflammation requires very great caution on account of the depression which it produces.

Dose.— $\frac{1}{10}$  to  $\frac{1}{2}$  grain = 0·006 to 0·032 grammes.

**Prescribing Notes.**—On account of the similarity in name to the active principle, care must be exercised to avoid confusion. The *Pulvis Elaterini Compositus* is often preferred; it is frequently given in the form of Pill with Compound Extract of Cologynth and Henbane. To prevent it causing persistent diarrhoea, it may be given with Henbane, especially in renal diseases; in cardiac cases it should be guarded by a stimulant to prevent too much depression.

**Official Preparations.**—Elaterinum. Elaterin is contained in *Pulvis Elaterini Compositus*.

**Not Official.**—Pilula Elaterii Composita.

**Antidotes.**—The same as for Croton Oil (*q.v.* p. 240).

**Official in Mex. ; Port., Extracto de Pepinos de S. Gregorio.**

**ELATERINUM.** ELATERIN ( $C_{20}H_{28}O_5$ ), eq. 345·60, occurs in small hexagonal scales or tables.

It is the active principle of Elaterium.

**Solubility.**—Insoluble in Water; sparingly in Alcohol (90 p.c.) ; 1 in 12 of Chloroform.

A recent figure obtained for Alcohol (90 p.c.) was 1 in 1100.

**Dose.**— $\frac{1}{40}$  to  $\frac{1}{10}$  grain = 0·0016 to 0·0065 grammes.

**Official in U.S.**

**PULVIS ELATERINI COMPOSITUS.** COMPOUND POWDER OF ELATERIN.

Elaterin, 1 ; Milk Sugar, 39.

**Dose.**—1 to  $\frac{1}{4}$  grains = 0·06 to 0·24 grammes.

**Official in U.S. (Trituratio),** Elaterin, 1 ; Milk Sugar, 9.

Not Official.

**PILULA ELATERII CO.**—Elaterium,  $\frac{1}{4}$  grain; Compound Extract of Colocynth, 2 grains; Calomel,  $1\frac{1}{2}$  grain ; Capsicum,  $\frac{1}{2}$  grain ; Syrup of Glucose *q.s.*—*St. Bartholomew's.*

**Dose.**—1 or 2 pills.

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Not Official.

### ELEMI.

A concrete, resinous exudation, the botanical source of which is undetermined, but is sometimes referred to *Canarium commune*.

It is imported from Manila.

Brazilian and Yucatan Elemis are Official in some of the Foreign Pharmacopœias.

**Solubility.**—The greater part is soluble in Alcohol (90 p.c.) ; wholly soluble in Ether.

**Medicinal Properties.**—Analogous to those of Turpentine. For external use only. The ointment is stimulant to indolent ulcers, and is used to keep up discharge caused by setons.

**Official in Austr., Belg., Dutch, Fr., Mex., Port., Span. and Swiss.**

**UNGUENTUM ELEMI.**—Elemi, 1 ; Spermaceti Ointment, 4 ; melt, strain, and stir till cold. (1 in 5)

**Official in Belg., Fr. (Onguent d'Arceus),** Span. and Swiss, 1 of Elemi and 1 of Turpentine in 4 of Ointment ; Dutch, 3 of Elemi, 2 of Turpentine, in 10 of Ointment ; Port., 2 of Elemi and 1 of Turpentine in 10.

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**EMBELIA.**

The Fruit (including the dried Fruit and the Seeds) of *Embelia Ribes* and of *Embelia robusta* is Official in the *Ind. and Col. Add.* for India and the Eastern Colonies.

The powdered Seeds are used in India as a remedy for tape-worm.—*L. '87, ii. 199.*

**Dose.**—60 to 240 grains = 4 to 16 grammes.

**ACIDUM EMBELICUM.**—Obtained from the Seeds. Insoluble in Water. It forms salts with Ammonium, Potassium, and Sodium.

**AMMONII EMBELAS.**—A tasteless crystalline salt, in red needles.

**Dose.**—3 to 6 grains = 0·2 to 0·4 gramme, in Honey or Simple Syrup.

Not Official.

**EMBLICA.**

The fruit of *Phyllanthus Emblica* (Embllic Myrobalan) has been used in Hindu Medicine for a long time, as a diuretic and laxative. The fresh fruits preserved in Syrup are imported into this country.

Not Official.

**EPHEDRINE HYDROCHLORIDE.**

The Hydrochloride of an alkaloid obtained from *Ephedra vulgaris* or *E. Helvetica*.

Has been recommended as a mydriatic in the form of a 5 p.c. Solution.—*B.M.J.E. '98, ii. 92.*

The addition to it of 1 p.c. of Homatropine Hydrochloride enhances its action, and the mixture which is supplied under the name 'Mydrine,' is a white powder readily soluble in Water; a 10 p.c. aqueous solution dilates the pupil moderately within a few minutes, without affecting the accommodation, and its effects pass away in two to four hours. It is useful in diagnostic examinations.—*L. '98, ii. 24; T.G. '98, 757.*

**ERGOTA.****ERGOT.**

The sclerotium of *Claviceps purpurea*, originating in the ovary of *Secale cereale*.\*

\* Ergot is common on grasses, and if it occurs in the pastures where cattle feed, it is said to occasion dry gangrene, causing them to lose their hoofs and horns.

During an epidemic of *Secale cornutum* it was noticed that one of the symptoms of ergot-poisoning was suppression of Milk in lactating women. The same result followed in cows that had been fed on meal containing Ergot.—*M.T.* '75, i. 586.

**Medicinal Properties.**—Ecbolic; used in obstetric practice to contract the uterus, assist expulsion of placenta, and prevent or stop post-partum haemorrhage. Employed in uterine haemorrhage from other causes, such as fibroid tumour; and in subinvolution; also in haemoptysis, haematemesis, haematuria, and epistaxis. Efficacious in flatulent dilatation of stomach; in acute myelitis and in paraplegia of inflammatory origin; in night sweats of phthisis. Deep intramuscular injection gives most rapid action in critical cases. Injections into the sphincter are valuable in prolapsus ani. After elaborate investigations Kobert recommends freshly powdered Ergot for certainty of action.

In hiccough (*L.* '85, ii. 276); in post-partum haemorrhage, equal parts of Liquid Extract of Ergot and Acetic Acid diluted with Water (*B.M.J.* '88, i. 295, 1148); in the sweats of phthisis (*L.M.R.* '81, 451 and *B.M.J.E.* '94, ii. 4); in periodic neuralgia (*T.G.* '94, 343); in diabetes insipidus, 30 minim doses of the Liquid Extract every three hours.—*L.M.R.* '80, 231, 446; '81, 12.

In chorea 1 dram. doses of the Liquid Extract given every four hours.—*B.M.J.* '03, ii. 133.

Ammoniated Tincture stated to be an active preparation, and to have proved useful in obstinate cases of uterine haemorrhage when other Ergot preparations have failed.—*C.D.* '01, i. 324, 663.

**Dose.**—20 to 60 grains = 1·3 to 4 grammes.

Swiss, maximum single dose, 1 gramme; maximum daily dose, 5 grammes.

**Prescribing Notes.**—*The unpleasant taste of the preparations of Ergot is improved by Tincture of Orange and Chloroform Water, or better by Tincture of Orange and Cinnamon Water. The Infusion and Hypodermic Injection should be made fresh as required. When the extract is ordered in pills, Powdered Liquorice Root added q.s. makes a good pill.*

*The prescriber has three fluid extracts to choose from (1) B.P. which is exhausted by cold Water; (2) U.S.P. by Diluted Alcohol mixed with Acetic Acid; (3) Liquor Ergotæ Ammoniatus (not official) by Ammoniated diluted Alcohol. The official Tinctura Ergotæ Ammoniata is similar to the last, but much weaker.*

*It is often desired to give Iron with Ergot, which causes a precipitate. This can be avoided by adding 6 grains of Citric Acid to 1 fl. dram. of Tincture of Perchloride of Iron.*

**Incompatibles.**—Astringents, metallic salts.

**Official Preparations.**—Extractum Ergotæ, Extractum Ergotæ Liquidum, Infusum Ergotæ, Tinctura Ergotæ Ammoniatus.

niata. Injectio Ergotæ Hypodermica is made with Extractum Ergotæ.

**Not Official.**—Discs of Ergotin, Pilula Ergotini, Extractum Ergotæ Fluidum, Liquor Ergotæ Ammoniatus, Acidum Scleroticum, Cornutine Citrate, Ergotinine, Ergotine (various), Extractum Secalis Cornuti Cornutino-Sphacelinicum, and Ergot Aseptic.

**Official in Austr., Belg., Dan., Dutch, Ger., Hung., Jap., Norw., Russ., Swed. and Swiss,** Secale Cornutum; Fr., Ergot de Seigle; Ital., Segala Cornuta; Mex., Cuerneillo de Centeno; Port., Cravagem de Centeio; Span., Cornezuelo de Centeno; U.S.

**EXTRACTUM ERGOTÆ. EXTRACT OF ERGOT. B.P.**  
*Syn.—ERGOTIN.*

100 of Ergot exhausted by percolating with Alcohol 60 p.c. Evaporate percolate to 25 and mix it with an equal quantity of Distilled Water, filter; add 4·7 of Diluted Hydrochloric Acid, and after twenty-four hours filter, wash the residue in the filter until free from acid; add 2 of Sodium Carbonate to the filtrate mixed with the washings, and evaporate the whole to a soft extract.

The corresponding preparation to this in B.P. '85 was prepared from Liquid Extract of Ergot and Rectified Spirit.

**Dose.**—2 to 8 grains = 0·13 to 0·52 grammes.

Swiss, maximum single dose, 0·1 gramme; maximum daily dose, 0·5 gramme.

**Official in Austr., Belg., Dan., Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

**EXTRACTUM ERGOTÆ LIQUIDUM. LIQUID EXTRACT OF ERGOT. N.O.***Syn.—EXTRACTUM SECALIS CORNUTI FLUIDUM.*

40 of Ergot exhausted by cold maceration in Distilled Water and evaporation to 28; admixture with 15 of Alcohol (90 p.c.); filtration after an hour. (1 in 1)

**Dose.**—10 to 30 minims = 0·6 to 1·8 c.c.

60 minims = 3·6 c.c., is not infrequently prescribed.

**Official in Dan., Ger., Norw., Russ. and Swed.** Extract with **Hydrochloric Acid** and dilute Alcohol; Mex. (Extracto fluido de Cuerneillo de Centeno) with **Acetic Acid** and dilute Alcohol; U.S. percolated with dilute Alcohol acidified with **Acetic Acid**; Swiss from solid Extract.

**INFUSUM ERGOTÆ. INFUSION OF ERGOT.**

Infuse 1 of freshly crushed Ergot with 20 of boiling Distilled Water for 15 minutes, and strain.

Now 1 in 20 instead of 1 in 40, and time reduced from 30 to 15 minutes.

**Dose.**—1 to 2 fl. oz. = 28·4 to 56·8 c.c.

Used also as an injection for gleet.

**INJECTIO ERGOTÆ HYPODERMICA.** HYPODERMIC INJECTION OF ERGOT. *B.P.Syn.*—HYPODERMIC INJECTION OF ERGOTIN.

Extract of Ergot, 100 grains; Phenol, 3 grains; Distilled Water, 220 minims, or a sufficient quantity. Mix the Phenol with the Distilled Water; boil for a few minutes; cool; add the Extract of Ergot, and, if necessary, sufficient recently boiled and cooled Distilled Water to produce 330 minims of the Injection. (1 in 3)

The above is the Official wording, but it is not clear why the water should be boiled *after* the addition of the Phenol. It would be better to dissolve both the Ergot and the Phenol in the previously Sterilised Water.

**Dose, by subcutaneous injection.**—3 to 10 minims = 0·18 to 0·6 c.c.

This injection should be recently prepared. 3·3 minims = 1 grain of Extract of Ergot.

Official in Port. (*Soluto de Ergotino com Glycerino*), Ergotin 1, Glycerin 4, Water 5; all by weight. (Mex. has Injection Ergotinine.)

**TINCTURA ERGOTÆ AMMONIATA.** AMMONIATED TINCTURE OF ERGOT.

Ergot, in No. 20 powder, 5; Solution of Ammonia, 2; Alcohol (60 p.e.), *q.s.* to yield 20. (1 in 4)

**Dose.**—30 to 60 minims = 1·8 to 3·6 c.c.

A simple tincture is Official in Belg., Dutch, Mex. and Port., 1 in 5; Swiss, 1 and 10; all by weight. U.S. (*Vinum Ergotæ*), 15 in 100.

**Not Official.**

**DISCS OF ERGOTIN**  $\frac{1}{3}$  grain = 0·02 grammie, and  $\frac{1}{4}$  grain = 0·016 grammie, are prepared for hypodermic use.

**PILULA ERGOTINI.**—Ergotin 2 grains, Liquorice Powder 3 grains.

**EXTRACTUM ERGOTÆ FLUIDUM** (U.S.).—Ergot extracted with Diluted Alcohol containing Acetic Acid. 1 of fluid Extract = 1 of Ergot.

**Dose.**—10 to 60 minims = 0·6 to 3·6 c.c.

**LIQUOR ERGOTÆ AMMONIATUS.**—A liquid Extract of Ergot (1 in 1), prepared with ammoniated diluted Alcohol.

**Dose.**—10 to 60 minims = 0·6 to 3·6 c.c.

**ACIDUM SCLEROTICUM.**—A weak acid principle obtained from Ergot by Dragendorff. It is used **hypodermically**  $\frac{1}{3}$  to  $\frac{3}{4}$  grain =

0·021 to 0·05 grammes, dissolved in Distilled Water or Thymol Water.—*P.J.* (3) vi. 1001; *Y.B.P.* '84, 87.

**CORNUTINE CITRATE.**—A soluble salt of an alkaloid which is stated by Kobert to be the active principle of Ergot. A brown powder, which is used in obstetric practice.

**Dose.**— $\frac{1}{2}$  to  $\frac{1}{6}$  grain = 0·0054 to 0·01 grammes, or subcutaneously  $\frac{3}{2}$  to  $\frac{1}{3}$  grain = 0·002 to 0·008 grammes.

Given in  $\frac{1}{100}$  grain hypodermically to contract uterus in a case of eclampsia.—*L.* '99, i. 1430.

A soluble **Cornutine Hydrochloride** has also been prepared.

**ERGOTININE.**—An alkaloid obtained from Ergot, insoluble in Water, soluble in Alcohol or Chloroform. Can be obtained commercially in the crystalline or the amorphous form. Used in post-partum haemorrhage by **hypodermic injection** of 5 to 10 minims of a solution containing  $\frac{1}{50}$  grain in 20 minims.—*B.M.J.* '82, ii. 1004. (Fr. Ergotinine Cristallisée.)

A soluble **Ergotinine Citrate** has also been prepared.

**ERGOTIN.**—This is a synonym for B.P. Extract of Ergot; there are also the following commercial varieties:—

**Ergotinum Bonjean.**—An aqueous reddish-brown Extract, purified by Alcohol. 1 part Extract = 5 to 6 parts Ergot.

**Dose.**— $\frac{1}{2}$  to  $4\frac{1}{2}$  grains = 0·1 to 0·3 grammes.

**Ergotinum Bonjean Depuratum pro Injectione.**—A purified liquid for injection,  $1\frac{1}{2}$  parts = 1 part Ergotin Bonjean.

**Dose.**— $\frac{1}{2}$  to  $4\frac{1}{2}$  grains = 0·1 to 0·3 grammes.

**Ergotin Bombelon Fluidum (Cornutinæ Ergotas).**—A brownish-black liquid.

**Dose.**—30 minims = 1·8 c.c. per os,  $3\frac{1}{2}$  to 8 minims = 0·2 to 0·5 c.c. subcutaneously.

**Ergotin Bombelon Spissum.**—Soft Extract. Administered internally in Pill form or in Solution. Ergot Bombelon Spissum, 10 grammes (or 154 grains); Aqua Laurocerasi, 7·5 grammes (or 2 fl. dram.); Alcohol (90 p.c.), 2·5 grammes (or 42 minims); 4 to 15 drops.

**Ergotinum Denzel Fluidum.**—A purified Extract.

**Dose.**—3 to 10 grains = 0·2 to 0·65 grammes.

**Ergotinum Kohlmann Fluidum.**—Brownish-black fluid, miscible with Water.

**Daily Dose.**—60 to 75 grains = 4 to 5 grammes.

**Ergotinum Purum Dialysatum Wernich Spissum.**—A dialysed aqueous Extract of Ergot, purified by treatment with Ether and Alcohol. Soluble in Water.

**Dose.**—10 to 30 grains = 0·65 to 2 grammes.

**Ergotinum Purum Dialysatum Wernich Fluidum.**—2 parts = 1 part of the above preparation.

**Dose.**—10 to 60 grains = 0·65 to 4 grammes.

**Ergotinum Purum Dialysatum Wernich Siccum.**

**Dose.**—22 grains = 1·4 grammes. **Official in Dutch Supp.**

**Ergotinum Purum Siccum Wiggers.**—A reddish-brown powder, soluble in Water.

**Dose.**— $\frac{1}{3}$  to  $1\frac{1}{2}$  grain = 0.02 to 0.1 grammes.

**Ergotin Yvon.**—A brownish-black fluid, prepared from fat-free Ergot by exhaustion with dilute Tartaric Acid Solution.

**Dose.**—10 to 20 drops internally per os; 1 c.c. = 16 minims hypodermically.

**EXTRACTUM SECALIS CORNUTI CORNUTINO-SPHACELINICUM (KOBERT).**—An Extract which combines the action of **Cornutine** and **Sphacelinic Acid**, an alkaloid and a resinous body, obtained by Kobert from Ergot. It is prepared by exhausting Ergot with strong Alcohol, and evaporating the liquid to an Extract, the fatty Oil being removed by Ether.

He does not give the dose of the above, but states that 'the extract thus prepared is not well suited for subcutaneous injection,' and 'the dose cannot be foretold because the proportion of active principles present in Ergot varies exceedingly with the year and the district.'—*Pr. xxxiii. 409; xxxv. 414.*

**ERGOT ASEPTIC.**—A sterilised concentrated preparation prepared from physiologically standardised Ergot, put up in bulbs containing 1 c.c. representing 2 grammes or 30 grains Ergot.

#### Not Official.

### ERIGERONTIS CANADENSIS OLEUM.

#### OIL OF CANADIAN FLEABANE.

A colourless, or pale yellow, mobile liquid, distilled from the fresh flowering Herb *Erigeron Canadense*, which grows abundantly in the American Mint fields and frequently contaminates that Peppermint Oil, as shown by its insolubility in Alcohol (85 p.c.).—*Y.B.P. '82, 214.*

When rectified, the Oil, which is a terpene ( $C_{10}H_{16}$ ), has a sp. gr. 0.850, and boils at  $176^{\circ}$  C.

**Medicinal Properties.**—Diuretic, tonic, and astringent. Chiefly employed for arresting internal haemorrhage.

**Dose.**—5 to 10 minims = 0.3 to 0.6 c.c. every two or three hours.

Official in U.S.

#### Not Official.

### ERYTHROL TETRANITRATE.

#### TETRANITRIN.

A colourless, crystalline solid melting at  $61^{\circ}$  C. ( $142^{\circ}$  F.), prepared from Erythrite (a tetratomic Alcohol). When kept in a dark and moderately cool place it is fairly stable, but if exposed to warmth, and especially sunlight, it rapidly undergoes decom-

position. It is but slightly soluble in Water, but dissolves readily in Alcohol (90 p.c.) and in Ether. It is a vaso-dilator and belongs to the group of which Glycerol Trinitrate (Nitroglycerin) may be regarded as the typical representative. Blood pressure experiments show that it has a less marked but more prolonged action than that substance.—*B.M.J.* '95, ii. 1213; '97, i. 907; '98, i. 18, 37, 248; ii. 936.

**Dose.**—1 grain, in Alcoholic solution or in the form of tablets. A list of cases treated with Erythrol Tetranitrate.—*B.M.J.* '99, ii. 1259. Dangers, *M.P.* '99, 338.

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### Not Official.

#### ERYTHROPHLÆUM.

CASCA BARK. SASSY BARK.

The Bark of the *Erythrophlæum guineense*. Introduced as a cardiac tonic in 1877.

An Ordeal Bark used in West Africa. It yields an alkaloid **Erythrophlæine**, the **Hydrochloride** of which is soluble in Water. *B.P.C.* had a Tincture (1 in 10), dose 5 to 10 minims = 0·3 to 0·6 c.c., but it is now deleted.

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#### ETHYL NITRITIS LIQUOR.

*See under SPIRITUS ÆTHERIS NITROSI.*

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**EUCAINE.** *See COCAINE*, p. 216.

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#### EUCALYPTI GUMMI.

EUCALYPTUS GUM.

A ruby-coloured exudation, or so-called Red Gum, from the Bark of *Eucalyptus rostrata* and some other species of Eucalyptus. Imported from Australia.

B.P. would have done well to have reserved the name *Eucalyptus* to the *Eucalyptus* Oil, and to have adopted the term *Gummi Rubrum*, described in the *Companion*, as being more descriptive and appropriate than the *Pharmacopœia* title.—*P.J.* '99, i. 276.

The kino of the *E. rostrata* is considered superior as a therapeutic agent to any of the other Eucalysts, and was held in high esteem by the late Sir Morell Mackenzie.—*P.J.* '99, i. 276.

Under the name of *Gummi Rubrum*, this has been 'Not Official' in the *Companion* since 1871.

**Medicinal Properties.**—Astringent, principally used in diarrhoea, dysentery, and relaxed throat.

This Gum adheres with great pertinacity to the mucous surfaces, and it is probably on this account that its astringency is more effective than that of Catechu, Kino, etc., although it contains less astringent matter.

The **Fluid Extract** is an excellent styptic; injected into the nostril, at once stays bleeding of the nose; a tablespoonful in a pint of water forms an astringent **injection** for the vagina or rectum; it also forms an astringent lotion for the eyes.

**Dose.**—2 to 5 grains = 0·13 to 0·32 grammes.

**Prescribing Notes.**—*Given in the form of cachets or in pills massed with Dispensing Syrup q.s. The Tincture mixes with Water and does not require Mucilage.*

**Official Preparation.**—Trochiscus Eucalypti Gummi.

**Not Official.**—Extractum Gummi Rubri Liquidum, Extractum Eucalypti Gummi Liquidum, Suppositoria Gummi Rubri, Syrupus Gummi Rubri, Tinctura Gummi Rubri, Trochiscus Eucalypti Compositus, Trochiscus Gummi Rubri (*Squire*).

### TROCHISCUS EUCALYPTI GUMMI.—EUCALYPTUS GUM LOZENGE.

1 grain of Eucalyptus Gum, in each, with Fruit basis.

#### Not Official.

**EXTRACTUM GUMMI RUBRI LIQUIDUM.**—Red Gum, 7; Water, 21; dissolve, strain, and add Alcohol (90 p.c.), 1.

**Dose.**—30 to 60 minims = 1·8 to 3·6 c.c., in a wineglassful of Water.

**EXTRACTUM EUCALYPTI GUMMI LIQUIDUM (B.P.C.).**—Dissolve 5 of Red Gum in 13 of Distilled Water; strain, and add 2 of Alcohol (90 p.c.) and sufficient Distilled Water to produce 20.

**SUPPOSITORIA GUMMI RUBRI.**—Powdered Red Gum, 5 grains; Extract Nux Vomica, 1 grain; Cocoa-nut Stearin, q.s. to make one suppository.

**SYRUPUS GUMMI RUBRI.**—Liquid Extract, 20; Sugar, 12; dissolve.

**Dose.**—30 to 60 minims = 1·8 to 3·6 c.c.

**TINCTURA GUMMI RUBRI.**—Gum, 1; Alcohol (90 p.c.), 4; digest and strain. Mixes with Water without becoming turbid.

**Dose.**—20 to 40 minims = 1·2 to 2·4 c.c.

1 part of this with 6 or 8 of Water for a **gargle**.

**TROCHISCUS EUCALYPTI COMPOSITUS.**—2 grains of Potassium Chlorate,  $\frac{1}{4}$  grain of Powdered Cubebs and 1 grain of Red Gum in each.—*Throat.*

**TROCHISCUS GUMMI RUBRI (Squire).**—Made with Rose Paste. This lozenge, which has been in use for about forty years, differs

in appearance and flavour from that now introduced into the B.P.

Useful for relaxed throat. They have also been recommended as a preventive of sea-sickness.

## EUCALYPTI OLEUM.

### OIL OF EUCALYPTUS.

The Oil distilled from the fresh Leaves of *Eucalyptus globulus*, and other species of *Eucalyptus*.

A colourless, or pale-yellow, oily, limpid liquid, having a characteristic aromatic odour; sp. gr. 0·910 to 0·930. It should contain at least 50 p.c. of Eucalyptol, and but very little Phellandrene.

For many years the Oil from *E. amygdalina* was the most esteemed variety, and was included in B.P. '85, but it is now excluded by the tests given in B.P. '98.

**Solubility.**—3 in 1 (or less) of Alcohol (90 p.c.), in all proportions of Absolute Alcohol; 1 in 38 of Alcohol (60 p.c.), (Amygdalina Oil, 1 in 175).

**Medicinal Properties.**—It is a powerful antiseptic and deodorizer; antipyretic. It is used as an inhalation in cases of pulmonary gangrene, phthisis, influenza, and coryza; and internally or by inhalation to relieve the cough in chronic bronchitis, phthisis, and asthma. Mixed with Iodoform as an application to hard and soft chancres, and as urethral suppository in gonorrhœa. Given internally for chronic inflammation of the bladder.

*Eucalyptus* antiseptic spray in eye operations.—*L.* '86, i. 305.

Inhalation in whooping-cough.—*B.M.J.* '86, i. 430. As a disinfectant, as a throat and nose spray, and as an inunction in scarlet fever.—*L.* '95, i. 861.

An infusion (60 grains in 6 oz. of the leaves) twice daily in the treatment of diabetes.—*B.M.J.* '02, i. 1295; ii. 1884; *P.J.* '02, ii. 113.

**Dose.**—½ to 3 minims = 0·03 to 0·18 c.c.

**Prescribing Notes.**—Given in the form of emulsion with Mucilage of *Acacia* and Water, or taken on Sugar. Used as an inhalation or spray. May be mixed with equal parts of Olive Oil for a liniment; 1 to 3 or 4 of Olive Oil as an antiseptic inunction in scarlet fever.

**Official Preparation.**—Unguentum Eucalypti.

**Not Official.**—Tinctura Eucalypti, Eucalyptus Gauze, Eucalyptus Wool and Lint, Nebula Eucalypti, Pessus Eucalypti, Vapor Eucalypti, Eugol, Eucalypteol, Eucalyptol, Phellandrene, Oleum Eucalypti Maculatae var. Citriodora, Eudesmol.

Official in Belg., Hung., Jap., Mex., Norw., Swed. and U.S.  
The Leaves are Official in Fr., Ital. and Swiss.

**UNGuentum EUCALYPTI.** EUCALYPTUS OINTMENT.

Oil of Eucalyptus (by weight), 1; Hard Paraffin, 4; Soft Paraffin, white, 5.

Now 1 in 10 instead of 1 in 5.

The Leaves and Oil of *E. amygdalina* are recommended by Bosisto for making the ointment.—P.J. '96, i. 224.

**Not Official.**

**TINCTURA EUCALYPTI** (B.P.C.).—Eucalyptus Leaves (of the *Eucalyptus globulus*), in No. 20 powder, 1; Alcohol (90 per cent.), to percolate 5.

**Dose.**—15 to 120 minims = 0·9 to 7·1 c.c.

Official in Belg., Dutch, Fr., Hung., Ital., Mex., Port., Span. and Swiss, 1 in 5.

**Vinum Eucalypti** (3 in 100) is official in Fr. Codex.

**EUCALYPTUS GAUZE.**—Contains about 6 p.c. of Oil of Eucalyptus.

**EUCALYPTUS WOOL** and **LINT**.—Containing 5 and 10 p.c. of the Oil.

**NEBULA EUCALYPTI**.—Oil of Eucalyptus, 20 minims; Liquid Paraffin to 1 fl. oz.—*Throat*.

**PESSUS EUCALYPTI**.—Oil of Eucalyptus, 15 minims; Oil of Theobroma to 2 fl. drm.

**VAPOR EUCALYPTI**.—Oil of Eucalyptus, 20 minims; Light Magnesium Carbonate, 10 grains; Water to 1 fl. oz. Mix a tea-spoonful in a pint of Water at 140° F. for each inhalation.—*Throat*.

**Eugol** is a liquid containing Beta-naphthol, Boric Acid, Menthol, Thymol, Eucalyptol, Gaultheria, and Hamamelis.—B.M.J. '98, i. 702; L. '98, i. 37.

**Eucalyptol** (Eucalyptene Bichloride).—A crystalline substance, almost insoluble in water, melting at 50° C. and boiling at 115° C.

**Dose.**—5 grains = 0·32 gramme, as an internal antiseptic. 30 grains in Olive Oil may be given as an enema in diarrhoea.

**EUCALYPTOL** (Crystallisable).—A definite chemical body ( $C_{10}H_{18}O$ ), obtained from Eucalyptus Oil by a freezing process, or by separation as **Eucalyptol Phosphate** and subsequent decomposition of this salt by hot Water. It is liquid at ordinary temperatures, but crystallises about 0° C. (32° F.). It has no action on polarised light. The sp. gr. is given in U.S. as 0·930, and in the Fr. Supp. as 0·940. It is identical with an oxidised compound obtained from Oil of Cajuput and a number of other essential Oils, consequently the names **Cineol** and **Cajuputol** have also been applied to it.

**Dose.**—1 to 3 minims = 0·06 to 0·18 c.c.

Official in Fr. Supp., Ital. and Swed.

**PHELLANDRENE.**—A lœvo-gyrate terpene, occurring in the Oil from *E. amygdalina*. Its presence can readily be detected by the formation of a crystalline nitrosite when the Oil is treated with Nitrous Acid.

**OLEUM EUCALYPTI MACULATÆ VAR. CITRIODORA.**—A pale-yellow, oily, liquid with a pleasant citronella-like odour. Sp. gr. 0·870 to 0·905. It contains from 84 to 90 p.c. Citronellal,  $C_{10}H_{18}O$ .

**EUDESMOL.**—A crystalline Camphor from Eucalyptus Oil.

## EUONYMI CORTEX.

### EUONYMUS BARK.

The dried Root-bark of *Euonymus atropurpureus*.

**Medicinal Properties.**—Tonic, cathartic, and diuretic. The dry extract is a powerful cholagogue and purgative; useful in chronic constipation and torpid liver.

**Prescribing Notes.**—Dried Extract in one form or another has been known for many years as Euonymin; usually given in the form of pills with Extract of Henbane; if prescribed alone, a little Soap,  $\frac{1}{8}$  grain in a 2 or 3 grain pill, and Alcohol (90 p.e.) q.s. makes a good mass. Also prescribed with Iridin, the dose of which is the same.

**Official Preparation.**—Extractum Euonymi Siccum.

**Not Official.**—Tinctura Euonymi.

**Official in Fr., Jap. and U.S.**

### EXTRACTUM EUONYMI SICCUM. DRY EXTRACT OF EUONYMUS.

Exhaust Euonymus Bark by percolation with Alcohol (45 p.c.); evaporate the percolate to dryness, and to each 4 of product add 1 of Calcium Phosphate. As it is hygroscopic it should be kept in stoppered bottles.

Now made with Alcohol (45 p.c.) in place of Rectified Spirit, and Calcium Phosphate substituted for Milk Sugar.

**Dose.**—1 to 2 grains = 0·06 to 0·13 grammes.

This preparation rapidly absorbs moisture on exposure to the air; which is not the case when Magnesia is used, as previously recommended in the *Companion*.

Fr. a powder; U.S. an extract.

### Not Official.

**TINCTURA EUONYMI (B.P.C.).**—Euonymus bark in No. 20 powder, 4; Alcohol (90 p.c.) sufficient to percolate 20.

**Dose.**—10 to 40 minims = 0·6 to 2·4 c.c.

Not Official.

**EUPATORIUM.****THOROUGHWORT. BONESET.**

The Leaves and Flowering Tops of *Eupatorium perfoliatum*. A perennial plant indigenous to the United States.

**Medicinal Properties.**—A valuable bitter tonic, but possessing diaphoretic properties. In large doses, emetic and aperient. Has been used in bronchial catarrh, influenza and muscular rheumatism.

**EXTRACTUM EUPATORII FLUIDUM (U.S.).**—A 1 in 1 fluid extract of the above prepared by percolation with Alcohol (48·6 p.c.).

**Dose.**—20 to 60 minims = 1·2 to 3·6 c.c.

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Not Official.

**EUPHORBIA PILULIFERA.**

A plant growing in Queensland and Tropical America. The herb is collected when in Flower and carefully dried. It yields its virtues to Alcohol and to Ether.

It has been recommended in spasmodic asthma and bronchial affections; in coryza and hay fever; and in spasmodic dyspnoea of whatever origin.—*L.* '85, ii. 86; *T.G.* '85, 92; *M.A.* '93, 260; '94, 20; *Y.B.T.* '94, 32.

**EXTRACTUM EUPHORBIÆ PILULIFERÆ.**—Obtained by the evaporation of the following Tincture.

**Dose.**— $\frac{1}{2}$  to 1 grain = 0·032 to 0·065 grammes.

**TINCTURA EUPHORBIÆ PILULIFERÆ (B.P.C.).**—Euphorbia in No. 20 powder, 1; Alcohol (60 p.c.) to percolate 5.

**Dose.**—10 to 30 minims = 0·6 to 1·8 c.c., well diluted with Water.

**Official in Fr. and Port., 1 in 5.**

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Not Official.

**EUPHORBIUM.**

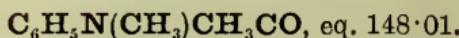
The concrete resinous Juice of *Euphorbia Resinifera* (a native of Morocco). **Official in Austr., Belg., Dan., Ger., Hung., Ital., Mex., Norw., Port., Span. and Swiss.** It was formerly Official in London, Edinburgh and Dublin Pharmacopœias. It contains an acrid resin.

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Not Official.

### EXALGIN.

#### METHYLACETANILIDE.



Long, colourless prismatic needles, or in tabular crystals.

**Solubility.**—1 in 50 of Water; 1 in 2 of Alcohol (90 p.c.); 1 in 4 of Alcohol (60 p.c.); 1 in 2 of Chloroform; 1 in 10 of Ether.

In hot water Exalgin is very apt to form supersaturated solutions, which when cold will not separate even when stirred or scratched, but set solid at once on the addition of a fragment of crystal.

**Medicinal Properties.**—In small doses it acts as an analgesic without producing ill effects, giving the best results in neuralgia and toothache. It is also slightly antipyretic.—*B.M.J.* '90, i. 344, 558; '90, ii. 735; *P.J.* (3) xix. 781, 861; *T.G.* '89, 339, 534, 746, 797; *L.* '89, i. 658; '90, ii. 845; '92, i. 1174, 1175; '93, i. 785. In large doses it possesses toxic properties.

Severe toxic symptoms in an asthmatic woman after taking one dose of 5 grains.—*L.* '95, i. 1307.

Case of poisoning by large dose (150 grains); recovery. Treatment consisted of the administration of 30 grains Salicylic Acid by mouth, and by hypodermic injections of  $\frac{1}{50}$  grain Atropine, followed by two similar injections of  $\frac{1}{100}$  grain.—*L.* '99, ii. 890.

**Dose.**— $\frac{1}{2}$  to 1 grain = 0·032 to 0·065 gramme, was found sufficient by Fraser; but larger doses, 4 to 8 grains = 0·26 to 0·52 gramme, have been given in France.

Official in Dutch Supp., Fr. and Mex.

**Prescribing Notes.**—May be given in Mixtures, previously dissolving it in a little Alcohol or Tincture before adding the Water. A nice pill mass is made by adding Glucose q.s. or  $\frac{1}{2}$  grain Compound Tragacanth Powder to each 3 grains of Exalgin and Dispensing Syrup q.s. It may also be conveniently given in cachets. Compressed Tablets are also prepared.

**MISTURA METHYLACETANILIDI.**—Methylacetanilide 3 grains, Syrup of Orange 1 fl. dram., Chloroform Water (*B.P.* '85) to 1 fl. oz.

### FEL BOVINUM PURIFICATUM.

#### PURIFIED OX BILE.

Evaporate 20 fl. oz. of fresh Ox Bile to 5 fl. oz., and mix it with 10 fl. oz. of Alcohol (90 p.c.); separate the precipitate, and reduce the clear fluid to a thick extract.

**Solubility.**—Soluble in Water and in Alcohol (90 p.c.). Insoluble in Ether.

**Medicinal Properties.**—Antiseptic and cholagogue, purgative. Used where there is a deficiency of bile; it assists the emulsification of fats.

**Dose.**—5 to 15 grains = 0·82 to 1 grammie.

It is not desirable that it should come in contact with the stomach, hence the pills should be coated with Keratin Solution, p. 388.

**Official in Belg. and Dutch Supp.** (*Fel Bovinum Depuratum*) ; **Port.** (*Extracto de Fel de Boi*), **U.S.** (*Fel Bovis Purificatum*) ; **Fr.** (*Extrait de Fiel de Bœuf*) ; **Span.** (*Extracto de Hiel*) ; **Mex.** (*Hiel de Toro*).

## FERRUM.

### IRON.

**Fe**, eq. 55·60.

Annealed Iron wire, having a diameter about 0·005 inch = 0·1 millimetre (about No. 35 wire gauge), or wrought iron nails; free from Oxide.

The use of Iron in medicine is of great antiquity; it is said to have been the first mineral used internally, more than 3000 years ago.

Iron Salts naturally divide into two groups: the Ferrous or Protosalts, based upon the Oxide  $\text{FeO}$ ; and the Ferric or Sesquisalts (Persalts), based upon the Oxide  $\text{Fe}_2\text{O}_3$ . Ferrous Salts have a strong tendency to pass into the Ferric condition by absorption of atmospheric Oxygen, a change which takes place very rapidly in presence of oxidising agents, as Chlorine, Nitric Acid, etc.

**Medicinal Properties.**—The Iron salts in general are haematinic and tonic; the Perchloride and Sulphate are also very astringent and haemostatic, and are antiseptic. All the Iron salts are stated to be converted into Chloride by the acid of the stomach. The Astringent salts are the most powerful tonics, but as they frequently produce gastric irritation, the Neutral salts are far more generally prescribed. Of these Ferrous Carbonate in its various forms, and the Iron and Ammonium Citrate, are in the greatest demand. The Phosphate preparations are very popular with children.

The Iron and Quinine Citrate, Arsenate, and Iodide, are given in special cases calling for these combinations.

Iron is useful in diseases characterised by debility, especially in anaemia from whatever cause; dyspepsia and neuralgia, which so often depend on anaemia; also in convalescence from acute and febrile diseases. It is contraindicated in apoplectic persons and generally in fevers, but has been given with benefit in erysipelas.

When constipation is a symptom, the iron is combined with some aperient, such as Aloes and Nux Vomica or Cascara; or a mixture containing Magnesium or Sodium Sulphate may be taken separately as required.

**Official Preparations.**—Of metallic Iron, Ferri Sulphas, Liquor Ferri Pernitrat, Liquor Ferri Perchloridi Fortis; of Iron wire, Syrupus Ferri Iodidi, Syrupus Ferri Phosphatis, Syrupus Ferri Phosphatis cum Quinina et Strychnina, Vinum Ferri; of Ferrous Sulphate, Ferri Arsenas, Ferri Carbonas Saccharatus, Ferri Phosphas, Ferri Sulphas Exsiccatus, Liquor Ferri Persulphatis, Mistura Ferri Composita; of Strong Solution of Ferric Chloride, Liquor Ferri Perchloridi, Tinctura Ferri Perchloridi; of Solution of Ferric Sulphate, Ferri et Ammoniaæ Citras, Ferri et Quininæ Citras, Ferrum Tartaratum, Liquor Ferri Acetatis; of Exsiccated Ferrous Sulphate, Pilula Ferri, Pilula Aloes et Ferri; of Reduced Iron, Trochiscus Ferri Redacti; of Iron and Ammonium Citrate, Vinum Ferri Citratis.

**Not Official.**—Extractum Ferri Pomati, Tinctura Ferri Pomati, Mistura Ferri Aromaticæ, and Iron Malate Wine.

**Official in Austr., Dan., Dutch, Ger., Hung., Ital., Jap., Norw., Swed. and Swiss,** Ferrum Pulveratum; Belg., Limatura Ferri, also ditto Porphyrisata; Fr., Fer Métallique; Ital. and Port., Ferro; Mex., Fierro; Span., Hierro; U.S., Ferrum.

#### VINUM FERRI. IRON WINE.

Iron, in wire, 1; Sherry, 20. Set aside for thirty days in a closed vessel, the Iron wire being almost, but not quite, immersed in the Sherry, the vessel being frequently shaken, and the stopper occasionally removed; filter.

The quantity of Iron dissolved seems to depend almost wholly upon the acidity of the Wine. We found that a good dinner Sherry containing Acids equal to 0·396 p.c. of Acetic Acid, dissolved 0·14 p.c. of Iron, and had its acidity reduced to 0·09 p.c. It was treated as directed in the B.P., and the bottle was about half full.

Of such a Vinum Ferri, 3 fl. dram. would represent the Iron contained in 5 minims of Tinctura Ferri Perchloridi.

Commercial samples seem to lie between 0·2 and 0·3 p.c. of Iron, although occasionally samples are found much weaker.

According to *P.J.* (3) xxi. 641, the Iron strength increases for three weeks and then diminishes. Our experience does not agree with this. A gallon quantity was put on and examined after the first week, and afterwards every month for four months, with the following results: 0·084, 0·114, 0·157, 0·185, 0·204 p.c. of Metallic Iron.

**N.B.**—The old Vinum Ferri, made with Malaga, is much sweeter than that of the B.P., and is sometimes ordered on that account.

**Dose.**—1 to 4 fl. dram. = 3·6 to 14·2 c.c.

Prescribed for young children and delicate females with irritable stomach.

## Not Official.

**MISTURA FERRI AROMATICA.**—Fine Iron Wire, 2; Red Cinchona Bark, in powder, 4; Calumba, in coarse powder, 2; Cloves, bruised, 1; Compound Tincture of Cardamoms, 12; Tincture of Orange Peel, 2; Peppermint Water, 48. Macerate the first four ingredients in the last one for three days in a closed vessel, agitating occasionally, filter, and make up with Peppermint Water to 50; to this add the Tinctures, and preserve in a well-stoppered bottle.

**Dose.**—1 to 2 fl. oz. = 28·4 to 56·8 c.c.

Much valued, especially in Dublin, as a stomachic tonic and haematinic.

**EXTRACTUM FERRI POMATI.**—Sour Apples, 50; convert them into a pulp and express; to the expressed liquid add Iron Wire 1; heat the mixture on a water-bath until the evolution of gas ceases. Dilute the liquid with Water to make 50 parts, and set it aside for several days; then filter and evaporate to a thick extract. The extract should be a greenish-black, and should form a clear solution with Water.

**Dose.**—3 to 10 grains = 0·20 to 0·65 grammes.

**Official in Austr. and Hung., Ext. Malatis Ferri; Dan., Norw. and Swed., Ext. Pomi Ferratum; Ger., Ext. Ferri Pomati; Jap., Russ. and Swiss, Ext. Ferri Pomatum.** Swiss is prepared by dissolving freshly precipitated Iron Peroxide in Apple Juice; all the others are with Metallic Iron and Apple Juice.

**TINCTURA FERRI POMATI.**—Ferrated Extract of Apples, 1; Alcohol (90 p.c.), 1; Cinnamon Water to make 10.

**Dose.**—30 to 90 minims = 1·8 to 5·4 c.c.

**Official in Austr., Dan., Hung., Norw. and Swed., 1 and 5; Ger., Jap., Russ. and Swiss, 1 and 9.**

**IRON MALATE WINE.**—In Devonshire a quantity of Iron Wire or Nails is digested in a bottle of Cider for a week; a wine-glassful three times a day is the dose.

## FERRI ACETATIS LIQUOR.

### SOLUTION OF FERRIC ACETATE.

A dark brownish-red liquid, sp. gr. 1·031, possessing an odour of Acetic Acid and an acid astringent taste.

Now made direct; Liquor Ferri Acetatis Fortior is deleted.

**Medicinal Properties.**—Has a diuretic in addition to its haematinic action, and being compatible with Potassium Acetate, is used in some cases of Bright's disease.

**Dose.**—5 to 15 minims = 0·3 to 0·9 c.c.

**Not Official.**—Tinctura Ferri Acetici Ætherea.

**Official in Russ. and Swiss,** sp. gr. 1·087 to 1·091; U.S., sp. gr. 1·160.

## Not Official.

**TINCTURA FERRI ACETICI AETHEREA** (*Swiss*).—Solution of Iron Acetate (sp. gr. 1·087 to 1·091), 8; Alcohol, 1; Acetic Ether, 1. All by weight.

Dose.—10 to 20 minims = 0·6 to 1·2 c.c.

Official in Dutch and Russ. (similar proportions).

## Not Official.

**FERRI ALBUMINAS.**

A liquor is Official in the Dutch Pharmacopœia containing 0·25 p.c. of Ferric Oxide, and several other formulas have been proposed, but it is more convenient to use the commercial scale preparation, which is fairly soluble in Water, and contains 5 p.c. of Ferric Oxide.

**Medicinal Properties.**—Hæmatinic tonic. Given with success in anæmia, and specially recommended in gastric ulcer.—*T.G.* '86, 399; *L.* '94, ii. 1113; '95, i. 1065; *B.M.J.E.* '94, i. 28, 96; *Pr.* liii. 87.

Dose.—3 to 10 grains = 0·2 to 0·65 grammes.

Official in Dan., Dutch, Ger., Russ. and Swiss, Liquor Ferri Albuminati; Swed., Liquor Oxydi Ferrici Albuminati. All containing 0·4 p.c. of Iron.

**FERRATIN.**—A brown, tasteless powder, containing 7 p.c. of Iron, prepared from egg Albumen and Tartarated Iron in alkaline solution. Daily dose for children, 5 to 15 grains, and for adults, 20 to 30 grains.—*Pr.* li. 427; *A.J.P.* '94, 500; *B.M.J.* '95, i. 985; *B.M.J.E.* '95, ii. 16; '96, i. 8; *T.G.* '96, 40; *L.* '96, ii. 1820; *M.J.E.* '02, ii. 11.

Official in Russ.

**Alboferin** (Iron Albuminate).—An almost odourless, brown powder, soluble in Water.—*B.M.J.E.* '02, i. 68.

**Carniferrin.**—A compound of Iron with Phospho-carnic Acid. A brown powder containing about 30 p.c. of Iron.

**Fersan** (Iron Paranucleo-proteid).—An Iron compound, obtained from red blood corpuscles, soluble in Water.—*B.M.J.E.* '00, ii. 20.

Dose.—10 to 30 grains = 0·65 to 2 grammes.

**Ferri Alginas** (Alginoid Iron).—A tasteless, brown powder, containing about 10 p.c. of Iron. Insoluble in Water, soluble in Ammonia. Has been recommended in anæmia.—*P.J.* '98, ii. 199; *B.M.J.* '02, i. 723.

Dose.—2 to 15 grains = 0·13 to 1 grammes.

**FERRI PEPTONAS.**—A brown, or reddish-brown powder, having a meaty and somewhat disagreeable odour. Readily soluble in Water.

Dose.—5 to 10 grains = 0·32 to 0·65 grammes.

**LIQUOR FERRI ET MANGANESII PEPTONATIS CUM HÆMO-GLOBINA.**—A neutral, or slightly alkaline solution, containing Iron and Manganese peptonates, equivalent to about  $1\frac{1}{4}$  grain of Iron, and about  $\frac{1}{2}$  grain Manganese in each fl. oz.

**Dose.**—2 to 4 fl. drm. = 7·1 to 14·2 c.c.

The above liquor may also be combined with **Nux Vomica**, containing 1 minim of the Tincture in 1 fl. drm.; with **Sodium Cacodylate**, containing  $\frac{1}{16}$  grain in 1 fl. drm.; or with **Arsinyl**,  $\frac{1}{8}$  grain in 1 fl. drm.

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## FERRI ARSENAS.

IRON ARSENATE.

ARSENIA TE OF IRON.—*B.P. '85.*

A tasteless, olive-green, amorphous powder, consisting of Ferrous Arsenate,  $\text{Fe}_3(\text{AsO}_4)_2 \cdot 6\text{H}_2\text{O}$ , Ferric Arsenate and some Iron Oxide, and containing not less than  $12\frac{1}{2}$  p.c. of the former.

**Medicinal Properties.**—Similar to those of Arsenious Acid; the quantity of Iron in the dose is extremely small.

**Dose.**— $\frac{1}{16}$  to  $\frac{1}{4}$  grain = 0·004 to 0·016 grammes.

**Prescribing Note.**—*Best given in pill well triturated with Milk Sugar, and massed with a little Glucose.*

**Antidotes.**—See Acidum Arseniosum.

**Official** in Belg., Fr., Mex. (Arsenato de Fierro), and Span.

### Not Official.

**FERRI ARSENIO-CITRAS AMMONIATA.**—Green, or yellowish-green, deliquescent scales, containing 1·4 p.c. Arsenious Acid and 15 to 18 p.c. of Iron. Readily soluble in Water. A valuable antiperiodic. Best administered by subcutaneous injection.

**INJECTIO FERRI ARSENATIS SOLUBILIS.**—A neutral, sterilised solution, containing 2·5 p.c. of the above salt, specially prepared for hypodermic administration. The dose, which is 1 c.c., contains 0·035 grammes Arsenious Acid and from 0·375 to 0·45 grammes of Iron.

**FERRI CACODYLAS.**—See under SODII CACODYLAS.

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### Not Official.

## FERRI BROMIDUM.

The commercial salt is in greyish-white crystalline masses, coated with red insoluble Oxybromide, which amounts to about 0·5 p.c.

It generally contains about 18 p.c. of Water, corresponding with the formula  $\text{FeBr}_2 \cdot 3\text{H}_2\text{O}$ . When this is not allowed for, a Syrup or Liquor made from the solid Bromide and calculated as if anhydrous, will be proportionately weaker than when made from Iron Wire.

**Official in Dutch Supp. (50 p.c.).**

**LIQUOR FERRI BROMIDI FORTIS.**—A clear green liquid. Sp. gr. 1·554.

Each fl. dram. contains 36 grains of Iron Bromide ( $\text{FeBr}_2 = 214 \cdot 3$ ).

This solution keeps well in a corked bottle, with bright Iron Wire immersed in it, and on filtration gives a clear green liquid.

With the addition of a small quantity of Hypophosphorous Acid, the Liquor will keep very well.

**Official in Fr., 33 p.c.; Mex. (Bromuro Ferroso), and Port. (Brometo Ferroso), both solid, no solution.**

**SYRUPUS FERRI BROMIDI.**—Strong Solution of Iron Bromide (filtered), 1; Simple Syrup, 7; mix.

Contains  $4\frac{1}{2}$  grains of Iron Bromide in each fl. dram.

**Medicinal Properties.**—A tonic in anaemia and amenorrhœa.

**SYRUPUS FERRI BROMIDI (B.P.C.).**—Iron Wire free from oxide,  $\frac{1}{2}$  oz.; Bromine, 533 grains; Refined Sugar, 14 oz.; Distilled Water, q.s. to yield 20 fl. oz.

Each fluid drachm contains about  $4\frac{1}{2}$  grains of Ferrous Bromide.

**Dose.**—30 to 60 minims = 1·8 to 3·6 c.c.

**SYRUPUS FERRI BROMIDI CUM QUININA (B.P.C.).**—Acid Quinine Hydrobromide, 160 grains; Diluted Hydrobromic Acid, 3 fl. dram.; Distilled Water, 13 fl. dram.; dissolve the Quinine salt in the Acid and Water mixed; then add Syrup of Ferrous Bromide q.s. to yield 20 fl. oz.

**Dose.**—30 to 60 minims = 1·8 to 3·6 c.c.

1 fl. dram. = 1 grain Acid Quinine Hydrobromide, and about 4 grains Ferrous Bromide.

**SYRUPUS FERRI BROMIDI CUM STRYCHNINA.**—Strychnine, 1 grain; Diluted Hydrobromic Acid, 70 minims; Syrup Ferrous Bromide to 8 fl. oz.

60 minims contains  $\frac{1}{6}\frac{1}{4}$  grain of Strychnine.

**SYRUPUS FERRI BROMIDI CUM QUININA ET STRYCHNINA (B.P.C.).**—Dissolve  $2\frac{1}{2}$  grains of Strychnine in powder, and 160 grains of Acid Quinine Hydrobromide, in a mixture of 3 fl. dram. of Diluted Hydrobromic Acid, and 13 fl. dram. of Distilled Water, by the aid of a gentle heat; then add Syrup of Ferrous Bromide to make 20 fl. oz.

In the case of this and the preceding formula, the quantity of Acid has been reduced as recommended in the *Companion*.

1 fl. dram. =  $\frac{1}{6}\frac{1}{4}$  grain Strychnine (= 0·001 gramme), 1 grain Acid Quinine Hydrobromide and about 4 grains Ferrous Bromide,

**Dose.**—30 to 60 minims = 1·8 to 3·6 c.c.

## FERRI CARBONAS SACCHARATUS.

### SACCHARATED IRON CARBONATE.

Dull, greyish-brown, amorphous, odourless powder, having at first a sweet and subsequently a ferruginous taste. It consists of Ferrous Oxycarbonate,  $x\text{FeCO}_3, y\text{ Fe(OH)}_2$ , more or less oxidised, mixed with sugar; the Ferrous salt, if reckoned as Ferrous Carbonate,  $\text{FeCO}_3$ , should constitute about one-third of the mixture.

**Medicinal Properties.**—An excellent chalybeate; readily taken and well borne. Not astringent. Useful in anaemic forms of amenorrhœa, neuralgia and sciatica. Ferrous Carbonate, in the form of 'Blaud's Pills,' is a very popular medicine.

**Dose.**—10 to 30 grains = 0·65 to 2 grammes.

The above dose is equivalent to  $3\frac{1}{3}$  to 10 grains = 0·216 to 0·65 gramme of Ferrous Carbonate.

**Prescribing Notes.**—*Given in cachets, lozenges, or pills. Sometimes ordered in the form of Powders to be taken on bread and butter. A good pill can be made by adding Dispensing Syrup q.s.*

**Incompatibles.**—Acids and Acidulous salts; all Vegetable astringents.

**Official Preparations.**—Mistura Ferri Composita and Pilula Ferri. Although not actually prepared from the Saccharated Iron Carbonate, they are here grouped for comparison.

**Not Official.**—Trochisci Ferri Carbonatis Saccharati.

**Official in Austr.,** contains about 40 p.c. of Iron Carbonate and Swiss, 20 p.c.; Belg., 20 p.c.; U.S. contains 15 p.c.; Gcr. and Russ., 9·5 to 10 p.c. of Iron equal to about 20 p.c. of Carbonate; Dan. and Norw., Hydratocarbonas Ferrosus Saccharatus. No sugar: Jap., and Mex.

**MISTURA FERRI COMPOSITA.** COMPOUND MIXTURE OF IRON. *N.O. Syn.*—GRIFFITH'S MIXTURE.

Reduce 60 grains of Myrrh to powder, and mix it with 30 grains of Potassium Carbonate and 60 grains of Refined Sugar; form this into a smooth thin paste, by rubbing with a small quantity of Rose Water. Gradually add more Rose Water and 50 minimis of Spirit of Nutmeg, until the product measures 7 fl. oz. Dissolve 25 grains of Ferrous Sulphate in 3 fl. oz. of Rose Water, and mix with the above.

It is convenient to keep the first part of the mixture ready made, and to add the Ferrous Sulphate Solution when required for use.

**Dose.**— $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 c.c.

**Official** in Dan., similar to Brit., but with three times as much Sugar, and without Nutmeg; Dutch Supp., with Spirit of Lavender instead of Spirit of Nutmeg; Norw., without Nutmeg, with Peppermint Water; Swed., Emulsio Myerlear Ferrata, with Peppermint Water and Tincture of Lavender in the place of Rose Water and Nutmeg; U.S., similar to Brit., but with Spirit of Lavender in the place of Nutmeg.

### PILULA FERRI. IRON PILL.

Mix 150 grains of Syrup, 10 grains of Glycerin and 20 grains of Distilled Water; with this incorporate 150 grains of Exsiccated Ferrous Sulphate; add 95 grains of Exsiccated Sodium Carbonate, and mix quickly. Allow fifteen minutes for the salts to react, and make into a pill mass by the addition of 50 grains of powdered Gum Acacia and 15 grains of powdered Tragacanth.

If divided into 5-grain pills, each pill will contain about 1 grain of Ferrous Carbonate.

**Dose.**—5 to 15 grains = 0·32 to 1 grammie.

Now made with Exsiccated Ferrous Sulphate and Exsiccated Sodium Carbonate, instead of Ferri Sulphas and Potassii Carbonas, used in *B.P.Add.* '90.

**Pilula Ferri Carbonatis** (*B.P.* '85).—Made with Saccharated Iron Carbonate, 4; Confection of Roses, 1; contains rather more Ferrous Carbonate than Pilula Ferri (*B.P.* '98).

The French Codex orders equal parts of the *dried* salts, and states that the pills should be preserved in well-stoppered bottles.

**Vallet's mass** is made by precipitating and washing the Iron Carbonate, and mixing it with Honey and Milk Sugar to form a mass.

**Blaud's Pills** are made by mixing (in the pill mass) dried Ferrous Sulphate and dried Potassium or Sodium Carbonate.

**Official** in Belg. and Dutch Supp., Pilulæ Blaud and Pilulæ Vallet; Dan. and Norw., Pilulæ Blaudii; Fr., Pilules de Carbonate Ferreux and Pilules Ferrugineuses de Blaud; Ger. and Austr. Add., Pilulæ Ferrici Carbonici Blaudii; Jap., Pilulæ Ferri Carbonici; Ital., Pillole di Carbonato Ferroso (Pilole di Blaud) also (Pillole di Vallet); Mex., Pildoras de Blaud and Pildoras de Vallet; Port., Pilulas de Carbonato Ferroso; Span., Pildoras de Blaud and Pildoras Ferruginosas de Vallet; Swed., Pilulæ Ferratae Blaudii and Pilulæ Myrrhae Ferratae; Swiss, Pilulæ Ferratae Kalinae (Pil. Blaudii) and Pilulæ Ferri Carbonici (Pil. Valleti); U.S., Pilulæ Ferri Carbonatis (Blaud's Pills), also Massa Ferri Carbonatis (Vallet's Mass).

### Not Official.

**TROCHISCI FERRI CARBONATIS SACCHARATI.**—Containing 3 grains of Saccharated Carbonate in each.

**Dose.**—1 to 3 lozenges.

**FERRUM OXIDUM SACCHARATUM** (*Ger.* and *Austr. Add.*).—A reddish-brown powder, with a sweet, slightly ferruginous taste; a mixture of Hydrated Ferric Oxide and Sugar, containing the equivalent of 2·8 p.c. of Iron.

**Dose.**—5 to 15 grains = 0·32 to 1 grammes.

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## **FERRI ET AMMONII CITRAS.**

### IRON AND AMMONIUM CITRATE.

Thin, translucent, deep ruby-red, odourless, deliquescent scales, possessing a ferruginous taste.

**Solubility.**—10 in 5 of Water, and measures 10 $\frac{1}{4}$ ; 2 dissolved in 3 of Water measure 4; almost insoluble in Alcohol (90 p.c.).

**Medicinal Properties.**—As a haematinic, it is a very effectual salt, and it possesses scarcely any astringency or tendency to cause gastric irritation or constipation; it may often be given when the stomach will not bear the more astringent preparations of Iron. It becomes moist if kept in paper.

**Dose.**—5 to 10 grains = 0·32 to 0·65 grammes.

**Prescribing Note.**—Generally prescribed in Solution with Tincture of Orange, which covers the taste well.

An Aqueous Solution, 2 fl. oz. representing 480 grains of the scale preparation, is convenient for dispensing, and keeps well.

**Incompatibles.**—Mineral Acids, Vegetable astringents, and fixed Alkalies.

**Official Preparation.**—Vinum Ferri Citratis.

**Official in Austr., Belg., Fr., Ital., Mex., Norw., Port., Span., Swed., Swiss and U.S.**

### **VINUM FERRI CITRATIS.—WINE OF IRON CITRATE.**

Iron and Ammonium Citrate, 160 grains; Orange Wine, q.s. to yield 20 fl. oz. (1 grain in each fl. dram.)

**Dose.**—1 to 4 fl. dram. = 3·6 to 14·2 c.c.

**Official in Jap., Vinum Ferri, 1 in 50; Mex., Vino de Fierro, 1 in 150; U.S., Tincture of Orange, Syrup and stronger White Wine, 1 in 25; Fr., Vin Chalibé, 1 and 200 of Malaga.**

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## **FERRI ET QUININÆ CITRAS.**

### IRON AND QUININE CITRATE.

Thin, transparent, pale yellowish-green, deliquescent scale

possessing a bitter and ferruginous taste. It is Officially required to yield 15 p.c. of Anhydrous Quinine.

**Solubility.**—2 in 1 of Water.

**Medicinal Properties.**—Bitter stomachic and tonic, combining the properties of both Iron and Quinine.

6½ grains contain 1 grain of Quinine.

**Dose.**—5 to 10 grains. = 0·32 to 0·65 grammes.

**Prescribing Notes.**—Generally given in Mixture with Tincture of Orange and Spirit of Chloroform, or Syrup of Orange; or in Pills made with Alcohol (90 p.c.) q.s. It is sometimes prescribed with Potassium Citrate or Lithium Citrate, both of which have a tendency to throw out Quinine Citrate. It can be given in the form of Effervescent Granules, dose one teaspoonful.

For dispensing purposes, it is convenient to keep an aqueous solution, 2 fl. oz. = 480 grains of the salt.

**Incompatibles.**—Alkalies, their Carbonates and Citrates, Lithium Citrate, Tannic Acid, and vegetable astringents.

**Official in Austr., Dan., Ger., Norw., Port., Russ., Span., Swed., Swiss and U.S.** U.S. has also Ferri et Quininæ Citras Solubilis.

#### Not Official.

**Ferri, Quininæ et Strychninæ Citras**, resembling the above but containing in addition 1 p.c. of Strychnine, and **Ferri et Strychninæ Citras** (U.S.), similar to the above but without Quinine, are both scale preparations, the doses of which are 2 to 5 grains = 0·13 to 0·32 grammes.

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#### Not Official.

### FERRI HYPOPHOSPHIS.

There are two Iron Hypophosphites, the Ferrous and the Ferric. The latter is used in most of the American and other proprietary Syrups of the Hypophosphites. The Ferric salt has now replaced the Ferrous salt in the B.P.C. preparations.

**FERROUS HYPOPHOSPHITE**, when freshly prepared, is a greenish crystalline powder, soluble about 1 in 10 of Water, but the commercial salts are so insoluble as to be practically useless for pharmaceutical purposes.

**FERRIC HYPOPHOSPHITE.**—This compound is obtained as a white precipitate on adding a solution of a soluble Hypophosphite to one of Ferric Chloride containing as little free acid as possible.

It is fairly insoluble in Water, but with the addition of Potassium Citrate it dissolves readily to a green solution, which forms with Sugar a pale yellow *neutral* Syrup, permanent and unalterable by exposure to air, which may be combined with other soluble Hypophosphites, Quinine Hydrochloride, and

Strychnine without the addition of acid, and is free from all the pharmaceutical objections attaching to Hypophosphite Syrups containing Iron in the ferrous condition.

It is usually sold as **Compound Syrup of Hypophosphites**, and is also made without Quinine to suit those who are peculiarly susceptible to that drug ; it is then prescribed 'sine Quinina.'

**FERRI HYPOPHOSPHITIS LIQUOR FORTIS (B.P.C.).**—Dissolve 1100 grains of Sodium Hypophosphite in 10 fl. oz. of Distilled Water, and add it slowly whilst stirring to a solution of 1000 grains of Ferric Chloride in 10 fl. oz. Distilled Water. Filter, wash precipitate until the washings are almost free from Chloride, and dissolve in a solution consisting of Ammonia (sp. gr. 0.880), 360 minims ; Citric Acid, 800 grains ; Distilled Water, 5 fl. oz. Filter.

Determine the amount of Iron, and add sufficient Distilled Water to form a solution containing in each fl. oz. 40 grains of Ferric Hypophosphite.

**Dose.**—10 to 30 minims = 0.6 to 1.8 c.c.

**LIQUOR HYPOPHOSPHITUM COMPOSITUS (B.P.C.).**—Dissolve 320 grains of Calcium Hypophosphite, 320 grains of Sodium Hypophosphite, and 160 grains of Magnesium Hypophosphite, in 12 fl. oz. of Distilled Water ; add 6 fl. oz. of Strong Solution of Ferric Hypophosphite. Filter, and add Distilled Water to make 20 fl. oz.

Each fl. dram. = 2 grains each of Sodium and Calcium Hypophosphites, 1 grain Magnesium Hypophosphite and  $1\frac{1}{2}$  grain of Ferric Hypophosphite.

**Dose.**— $\frac{1}{2}$  to 2 fl. dram. = 1.8 to 7.1 c.c.

**SYRUPUS FERRI HYPOPHOSPHITIS (B.P.C.).**—Strong Solution of Ferric Hypophosphite, 1 ; Syrup, 4.

Each fl. dram. = about 1 grain of Ferric Hypophosphite.

**Dose.**— $\frac{1}{2}$  to 2 fl. dram. = 1.8 to 7.1 c.c.

**SYRUPUS HYPOPHOSPHITUM COMPOSITUS (B.P.C.).**—Calcium Hypophosphite, 80 grains ; Manganese Hypophosphite, 40 grains ; Potassium Hypophosphite, 40 grains ; Quinine Hypophosphite, 20 grains ; dissolve in 8 fl. oz. of Distilled Water. Dissolve 1 grain of Strychnine in 2 fl. dram. of Hypophosphorous Acid ; filter, and add 1 fl. oz. of Strong Solution of Ferric Hypophosphite and 14 oz. of Refined Sugar ; dissolve without heat, add 20 minims of Chloroform dissolved in 40 minims of Alcohol (90 p.c.) ; shake, and add sufficient Distilled Water to make 20 fl. oz.

Each fl. dram. contains  $\frac{1}{160}$  grain Strychnine, and  $\frac{1}{8}$  grain of Quinine Hypophosphite.

**Dose.**— $\frac{1}{2}$  to 2 fl. dram. = 1.8 to 7.1 c.c.

This Syrup is liable to become cloudy soon after being made. This cloudiness may be prevented by a few additional drops of Ammonia and warming the Syrup, or, better still, by ensuring the distinct alkalinity of the Ammonium Citrate Solution used in the preparation of the Strong Solution of Ferric Hypophosphite.

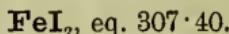
The substitution of Potassium Citrate (1·033 grammes) in the place of Ammonium Citrate for dissolving the precipitated Ferric Hypophosphite, as originally recommended in the *Companion*, is also advocated.—*P.J.* '02, ii. 532.

The odour occasionally emitted by this Syrup is due to Sulphuretted Hydrogen derived from Sulphites present as an impurity in the Hypophosphites used. Most samples of Hypophosphites contain Phosphites.—*P.J.* '95, ii. 144.

### Not Official.

#### FERRI IODIDUM.

##### IRON IODIDE.



In reddish-brown, deliquescent dense masses, easily soluble in Water, leaving only a slight residue, and forming a reddish-yellow solution owing to partial oxidation. The solution may be made green by either hot or cold digestion over bright Iron Wire.

**Medicinal Properties.**—It combines the properties both of Iodine and Iron, and is a most valuable tonic and alterative in the treatment of scrofulous and syphilitic diseases.

**Prescribing Notes.**—*Best given in the form of the Official Syrup of Ferrous Iodide; it is also given in the form of pills massed with powdered Gum Acacia and Dispensing Syrup q.s. In some cases Liquorice Powder must be used instead of Dispensing Syrup.*

**Official Preparation.**—Syrupus Ferri Iodidi.

**Official in Belg., Mex., Port., Span. and Swiss.**

**LIQUOR FERRI IODIDI FORTIS.**—A clear, greenish liquid. Sp. gr. 1·511.

Each fl. dram. contains 34 grains of Ferrous Iodide ( $\text{FeI}_2 = 307\cdot40$ ).

With the addition of a small quantity of Hypophosphorous Acid, the solution will keep well for a long time.

**Official in Ger. and Russ.**, containing 50 p.c. of Ferrous Iodide; Mex., 20 p.c.

**FERRI IODIDUM SACCHARATUM (U.S.).**—A solution of Ferrous Iodide evaporated to dryness, mixed with Milk Sugar and Reduced Iron; 5 parts contain about 1 of Iodide.

**Incompatibles.**—Acids, Acid salts, Alkalies and their Carbonates, Lime Water, vegetable astringents.

**PILULÆ FERRI IODIDI (U.S.).**—Reduced Iron, 4 grammes; Iodine, 5 grammes; Glycyrrhiza, in No. 60 powder, 4 grammes; Sugar, in fine powder, 4 grammes; Extract of Glycyrrhiza, in fine powder, 1 gramme; Acacia, in fine powder, 1 gramme; Water,

a sufficient quantity. To the Reduced Iron, contained in a small mortar, add 6 c.c. of Water, and then gradually the Iodine, constantly triturating, until the mixture ceases to have a reddish tint. Then add the remaining powders, previously well mixed together, and mix the whole thoroughly. Transfer the mass to a porcelain capsule, and evaporate the excess of moisture, on a water-bath, with constant stirring, until the mass has acquired a pilular consistence. Coat with Balsam of Tolu dissolved in Ether. To make 100 pills.

• Pilula Ferri Iodidi was official in B.P.'85, but omitted in 1898.

**Official in Belg., Dan., Dutch, Fr., Ital., Mex., Norw., Port., Span., Swed. and Swiss;** each pill contains about  $\frac{3}{4}$  grain Iodide of Iron, Hung. about 1 grain, and all coated with Balsam of Tolu dissolved in Ether, except the Swiss.

#### Official Preparation.

#### SYRUPUS FERRI IODIDI. SYRUP OF FERROUS IODIDE.

Iron Wire,  $\frac{1}{2}$  oz.; Iodine, 726 grains; Refined Sugar,  $16\frac{1}{2}$  oz.; Distilled Water, *q.s.* to produce 20 fl. oz. of a pale green Syrup containing 3 grains of Ferrous Iodide in 33 minims.

**Dose.**—30 to 60 minims = 1·8 to 3·6 c.c.

This Syrup is very liable to become discoloured. It may be due to one or other of two causes. (1) Oxidation of Iron, which may be prevented by careful manipulation, or removed by Hypophosphorous Acid. (2) Slight caramelisation of the Sugar by overheating; this cannot be removed by reducing agents.

**Official in Brit.** 5·7 p.c. of Iodide of Iron; Austr., Dutch, Ger., Jap. and Russ., 5 p.c.; Belg., Fr., Ital. and Port., 0·5 p.c.; Dan., Norw., Swed. and U.S., 10 p.c.; Hung., 12 p.c.; Span., 0·67 p.c.; Mex. and Swiss, 1 p.c. All by weight.

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#### FERRI LACTAS.

*See under ACIDUM LACTICUM.*

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Not Official.

#### FERRI PERCHLORIDUM.

#### FERRIC CHLORIDE.

N.O. *Syn.*—CHLORETUM FERRICUM.

The commercial solid, or crystalline, Ferric Perchloride approximates to the formula  $\text{Fe}_2\text{Cl}_6 \cdot 12\text{H}_2\text{O}$ ; it occurs in yellow, or yellowish-brown, crystalline masses, deliquescent in air. It is soluble in Water, Alcohol (90 p.c.), Ether and Glycerin.

**Medicinal Properties.**—A powerful local styptic. 3 grains to an oz. of Water for a spray; 60 to 120 grains to an oz. of Water or Diluted Glycerin for a paint.

2½ oz. dissolved in 1 oz. of Water makes a solution about the same strength as Liquor Ferri Perchlor. Fort.

For Incompatibles, see Tinctura Ferri Perchloridi.

The Anhydrous Ferric Chloride ( $\text{Fe}_2\text{Cl}_6$ , eq. 322·34), prepared by sublimation, is in black metallic-looking plates. It deliquesces rapidly on exposure to the air, and then solidifies again to a Hydrate ( $\text{Fe}_2\text{Cl}_6 \cdot 12\text{H}_2\text{O}$ ), containing 40 p.c. of Water. Another Hydrate ( $\text{Fe}_2\text{Cl}_6 \cdot 5\text{H}_2\text{O}$ ), containing 21·7 p.c. of Water (Official in the Portuguese Pharmacopœia), can be obtained by evaporating an acid solution until syrupy, and then cooling it.

Official in Austr., Belg., Dau., Dutch, Ger., Hung., Jap., Mex., Norw., Port., Russ., Span., Swed. and U.S.

## FERRI PERCHLORIDI LIQUOR FORTIS.

### STRONG SOLUTION OF FERRIC CHLORIDE.

A reddish-brown liquid, sp. gr. about 1·420, readily miscible with Water, and Alcohol (90 p.c.).

**Medicinal Properties.**—A powerful local styptic and astringent; escharotic. Mixed with equal parts of Glycerin has been used as a paint in diphtheria. Diluted (1 to 3), is injected into the uterus in bad cases of post-partum haemorrhage, but the risk of embolism or metritis should not be forgotten; and into the nose for chronic hypertrophic rhinitis. The more dilute forms are used internally to arrest haemorrhage in the gastro-intestinal or urinary tracts. See also 'Tinctura Ferri Perchloridi,' p. 283.

**Official Preparations.**—Liquor Ferri Perchloridi and Tinctura Ferri Perchloridi.

**Not Official.**—Liquor Ferri Chloroxydi, Liquor Ferri Dialysatus, and Tinctura Ferri Chlorati Ætherea.

Official in Mex., sp. gr. 1·260; Austr., sp. gr. 1·280; Norw. and Jap., sp. gr. 1·280 to 1·282; Belg., Fr., Port. and Span., about 9 p.c. of Iron; Dan. and Swed., sp. gr. 1·298 to 1·302; Swiss, about 10 p.c. of Iron; Dutch, about 15 p.c. of Iron; Ger., Hung. and Russ., 10 p.c. of Iron; Ital., sp. gr. 1·28 to 1·29; U.S., sp. gr. 1·387.

## LIQUOR FERRI PERCHLORIDI. SOLUTION OF FERRIC CHLORIDE.

Dilute 1 of Strong Solution of Ferric Chloride with Distilled Water to make 4 of a liquid, sp. gr. 1·110. (1 in 4)

**Dose.**—5 to 15 minims = 0·32 to 1·0 grammes.

This solution and the 'Tincture of Ferric Chloride' contain identical proportions of Ferric Chloride; for 'Prescribing Notes' see below.

**Official in Dutch Supp.**

**TINCTURA FERRI PERCHLORIDI.** TINCTURE OF FERRIC CHLORIDE. N.O. *Syn.*—STEEL DROPS. TINCTURE OF STEEL.

Mix 1 of Strong Solution of Ferric Chloride with 1 of Alcohol (90 p.c.), and add Distilled Water to make 4. (1 in 4)

**Medicinal Properties.**—Astringent, tonic, haemostatic. Given in passive haemorrhage and to arrest haemorrhage in typhoid. As a general tonic during convalescence; highly useful in anaemia; valuable in large doses for erysipelatous inflammations.

**Dose.**—5 to 15 minims = 0·3 to 0·9 c.c.

**Prescribing Notes.**—*Preparations of Iron can be given in Infusion of Quassia, or Calumba, but they tinge Infusion of Chiretta and Hops, and change to brown or black those of Cusparia, Gentian, Orange, Cascarilla, Cinchona, Cloves. Digitalis, and all astringent infusions.*

*Glycerin is better than an equal quantity of Syrup for masking the unpleasant astringent taste of Ferric Chloride Solutions. Chlorform Water is also useful.*

**Styptic Wool**, containing Ferric Chloride, is useful for local application.

**Incompatibles.**—Alkalies and their Carbonates, Lime Water, Calcium Carbonate, Magnesia and its Carbonate, Salicylates, Mucilage of Acacia.

**Official in Dan., Norw. and Swed.**, Solutio Chloreti Ferrici Spirituosa; Dan. and Swed., also Solutio Chloreti Ferrici Spirituoso-Ætherea; Ger. and Russ., Tinct. Ferri Chlorati Ætherea; U.S., Tinctura Ferri Chloridi; Belg. and Port., from the salt, with Alcohol and Ether; Ital. (Soluzione Alcoolico-Eterea di Cloruro Ferrico), from the Solution with Alcohol and Ether. See also 'Tinctura Ferri Chlorati Ætherea.'

**Tinctura Ferri Sesquichloridi P.L.**—Tinctura Ferri Muriatis P.E.—There is an idea, which periodically finds its way into print, that a Tincture made according to the formula of the London and Edinburgh Pharmacopœias is more efficacious than the B.P., and can be given in cases where the other is not tolerated. From a chemical point of view the only difference is that P.L. is three-fourths the strength of B.P., and when freshly made contains one-fifteenth of the Iron in the Ferrous condition. Alcohol has no reducing action on Ferric Chloride, even after years of contact.

**Liquor Ferri Chloroxydi** and **Liquor Ferri Dialysatus** have

been much used as palatable, non-astringent and non-irritant haematinics, given in cases where the astringent salts would derange the stomach.

### Not Official.

**LIQUOR FERRI CHLOROXYDI.**—A solution in Water of a basic Ferric Chloride, containing 0·8 p.c. of Chlorine for 5 p.c. of Ferric Oxide, approximating to the formula  $\text{Fe}_2\text{Cl}_6 \cdot 7\text{Fe}_2\text{O}_3$ . This is the ratio of the Solution made by us many years previous to the use of 'Dialysed Iron.' It was and is still made to contain 7·1 p.c. of Ferric Oxide to correspond with the Official Tincture.

**Dose.**—10 to 30 minims = 0·6 to 1·2 c.c.

**LIQUOR FERRI DIALYSATUS** (Dialysed Iron).—This was formerly Official in *B.P.*, but is now omitted. It contains 5 p.c. of Ferric Oxide, and was dialysed until nearly tasteless. It is better to work to a definite percentage of Chlorine; it may be reduced to 0·3 p.c. without interfering with the stability of the solution. It is very doubtful, however, whether there is any advantage in reducing the Chlorine ratio below that of Liquor Ferri Chloroxydi as described above.

Another method is to add a certain proportion of diluted Ammonia to a solution of Ferric Chloride, so that the precipitate which first forms just re-dissolves. The Ammonia becomes Ammonium Chloride and the Iron a very basic Oxychloride, from which the Ammonium salt is readily dialysed. Where a saving of expense is an object, as in some large institutions, it would probably be equally efficacious without dialysis.

**Dose.**—10 to 30 minims = 0·6 to 1·8 c.c.

**Official in Austr., Ferrum Hydro-oxydatum Dialysatum Liquidum;** Ger., Hung., Russ. and Swed., when Liquor Ferri Oxidati Dialysati is prescribed, Liquor Ferri Oxychlorati (sp. gr. 1·050) may be dispensed; Swiss, Ferrum Oxychloratum Solution, sp. gr. 1·05; Mex., Oxido de Fierro Dialisado, sp. gr. 1·046.

**TINCTURA FERRI CHLORATI ÆTHEREA** (Ger.).—Liquor (sp. gr. 1·280), 1; Ether, 2; Spirit, 7. All by weight.

**Official in Belg., Dan., Ital., Norw., Port., Russ. and Swed.**

**SYRUPUS FERRI SUBCHLORIDI** (*B.P.* '85).—It contains about 3½ grains of Anhydrous Ferrous Chloride, and is roughly half the strength in Iron of the Tinctura Ferri Perchloridi.

**Dose.**—½ to 1 fl. dram. = 1·8 to 3·6 c.c.

## FERRI PERNITRATIS LIQUOR.

### SOLUTION OF FERRIC NITRATE.

A reddish-brown liquid, sp. gr. 1·107, readily miscible with Water, containing Ferric Nitrate,  $\text{Fe}_2\text{O}_3\text{NO}_3$ , eq. 480·68, in solution.

**Medicinal Properties.**—Tonic, astringent and escha-

rotic. Like the Ferrie Chloride it is useful in haematemesis and in haemorrhage from the bowel, either by the mouth or as an injection with starch mucilage.

**Dose.**—5 to 15 minims = 0·3 to 0·9 c.c.

110 minims contain 3½ grains of Iron; 100 c.c. contain 3·3 grammes.

Official in U.S., half the strength, sp.gr. 1·050.

## FERRI PHOSPHAS.

### IRON PHOSPHATE.

A dull, greyish-blue, amorphous, odourless powder, which is officially required to contain not less than 47 p.c. of Hydrous Ferrous Phosphate,  $\text{Fe}_3(\text{PO}_4)_2 \cdot 8\text{H}_2\text{O}$ , with Ferric Phosphate and some Iron Oxide.

**Solubility.**—Insoluble in Water, but soluble in Hydrochloric Acid.

**Medicinal Properties.**—Tonic. Possesses the general properties of the ferruginous preparations. Given with advantage in amenorrhœa, some forms of dyspepsia, rachitis and tubercular bone diseases; in nervous depression and exhaustion with tendency to phosphaturia.

**Dose.**—5 to 10 grains = 0·32 to 0·65 gramme.

**Prescribing Notes.**—*Given in cachets, pills or powders. A good pill can be made by adding one-third of its weight of Diluted Glucose.*

**Official Preparations.**—Syrupus Ferri Phosphatis, Syrupus Ferri Phosphatis cum Quinina et Strychnina.

**Not Official.**—Liquor Ferri Phosphatis Fortis, Pilula Trium Phosphatum, Syrupus Ferri Phosphatis Compositus, Squire's Chemical Food, Syrupus Ferri Phosphatis c. Manganesio.

Official in Belg., Mex., Span. and U.S.

## SYRUPUS FERRI PHOSPHATIS. SYRUP OF FERROUS PHOSPHATE.

Iron, in Wire, 75 grains; Concentrated Phosphoric Acid, 1½ fl. oz.; Syrup, 14 fl. oz.; Distilled Water, *q.s.* to make 20 fl. oz. of a pale green syrupy liquid, containing 1 grain of Anhydrous Ferrous Phosphate in 60 minims.

**Dose.**—½ to 1 fl. dram. = 1·8 to 3·6 c.c.

This Syrup can be conveniently made by adding 1 volume of Liquor Ferri Phosphatis Fortis to 5½ vols. of Simple Syrup and 1½ vol. of Distilled Water.

Ferrous Phosphate absorbs Oxygen with great rapidity on ex-

posure to air, and requires such a large excess of Acid to keep it in solution, that in framing a formula for Syrupus Ferri Phosphatis a compromise must be made between liability to deposit on the one hand and acidity on the other. We think it is better to use a comparatively small excess, and keep the Syrup in small bottles lying down.

**SYRUPUS FERRI PHOSPHATIS CUM QUININA ET STRYCHNINA.** SYRUP OF PHOSPHATE OF IRON WITH QUININE AND STRYCHNINE.

Iron, in Wire, 75 grains; Concentrated Phosphoric Acid,  $1\frac{1}{4}$  fl. oz.; Strychnine, in powder, 5 grains; Quinine Sulphate, 130 grains; Syrup, 14 fl. oz.; Distilled Water, *q.s.* to make 20 fl. oz. of a pale yellowish-green syrupy liquid, possessing a very bitter taste, and having a strong fluorescence; it contains 1 grain of Anhydrous Ferrous Phosphate,  $\frac{4}{5}$  grain of Quinine Sulphate, and  $\frac{1}{3}\frac{1}{2}$  grain of Strychnine in 60 minims.

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1.8 to 3.6 c.c.

It resembles the compound known as Easton's Syrup.

It can be made extemporaneously by dissolving 2 grains of Strychnine and 51 grains of Quinine Sulphate in 24 minims of Concentrated Phosphoric Acid and Distilled Water to  $1\frac{1}{2}$  fl. oz.; Liquor Ferri Phosphatis Fortis, 1 fl. oz.; Syrup to make 8 fl. oz.

**Official in U.S.**

A mixture of Easton's, Fellows' and Parrish's Syrups is sold as 'Triple Syrup.'

**Not Official.**

**LIQUOR FERRI PHOSPHATIS FORTIS.**—Containing 8 grains per fl. dram. of the Anhydrous Phosphate; is made by dissolving 360 grains of Iron Wire in 6 fl. oz. of Concentrated Phosphoric Acid, with sufficient Water to make 12 fl. oz.

**PILULA TRIUM PHOSPHATUM** (Easton's Pill).—Iron Phosphate, 1 grain; Quinine Sulphate, 1 grain; Strychnine,  $\frac{1}{2}\frac{1}{2}$  grain; Concentrated Phosphoric Acid,  $1\frac{1}{2}$  minims; Liquorice Powder, to 4 grains.—*Guy's.*

**Dose.**—4 to 8 grains = 0.26 to 0.52 grammes.

**SYRUPUS FERRI PHOSPHATIS COMPOSITUS** (*B.P.C.*).—Iron Wire, free from oxide,  $37\frac{1}{2}$  grains; Concentrated Phosphoric Acid (sp. gr. 1.5), 1 fl. oz.; Distilled Water, 5 fl. dram.; dissolve by a gentle heat in a flask plugged with cotton-wool, the Iron being completely covered by the liquid.

Precipitated Calcium Carbonate, 120 grains; Concentrated Phosphoric Acid, 4 fl. dram.; Distilled Water, 2 fl. oz.; mix, and add Potassium Bicarbonate, 9 grains; Sodium Phosphate, 9 grains; filter, and set aside.

Cochineal, 30 grains; Distilled Water,  $7\frac{1}{2}$  fl. oz.; boil for fifteen minutes, and when cooled filter, pouring over the filter a sufficient quantity of Distilled Water to produce 7 fl. oz. of filtrate;

to this add Refined Sugar, 14 oz.; heat till dissolved, and strain. When cold, add the Iron and Calcium solutions and sufficient Distilled Water to produce 20 fl. oz.

Each fl. dram. =  $\frac{1}{2}$  grain Ferrous Phosphate and  $\frac{4}{5}$  grain Calcium Phosphate with small quantities of Potassium and Sodium Phosphates. It should be kept in bottles quite full.

**Dose.**— $\frac{1}{2}$  to 2 fl. dram. = 1·8 to 7·1 c.c.

**SQUIRE'S CHEMICAL FOOD.**—The preparation made for many years by Parrish was imported and subsequently purchased by Squire.

It contains Ferrous Phosphate, Calcium Phosphate, Sodium Phosphate and Potassium Phosphate.

**Dose.**—Half to one teaspoonful, in water, with meals.

A formula was published many years ago, but how far this has been a success is shown by comparing the Syrups commercially sold, all of them more or less emphatically stated to be made according to the published formula.

In nine samples analysed, the Iron Phosphate ranged from 0·19 to 0·66, the Calcium Phosphate from 0·5 to 1·6, the total Phosphoric Acid from 1·5 to 4·7; these results are expressed in grains per fl. dram.

**Medicinal Properties.**—A tonic in debility, of whatever origin, and during convalescence from acute diseases. Specially indicated in scrofula and rickets, and during pregnancy.

**SYRUPUS FERRI PHOSPHATIS C. MANGANESIO.**—Dissolvo 100 grains Manganese Phosphate in 1 $\frac{1}{4}$  fl. oz. of Liquor Ferri Phosphatis Fortis and 30 minims of Phosphoric Acid, then dilute to 20 fl. oz. with Simple Syrup.

This Syrup will contain in each fl. dram.  $\frac{1}{2}$  grain each of Anhydrous Ferrous Phosphate and Anhydrous Manganese Phosphate.

**Dose.**—1 fl. dram. = 3·6 c.c.

This can sometimes be taken when Syrup of Ferrous Phosphate disagrees.

**FERRI PHOSPHAS SOLUBILIS (U.S.).**—Prepared by dissolving Ferric Citrate and Sodium Phosphate in Distilled Water, evaporation and scaling on plates of glass. The scales are transparent and of a bright green colour, freely soluble in Water; they however become dark and discoloured on exposure to air. It is used in the preparation of Syrupus Ferri Quininæ et Strychninæ Phosphatum U.S.

## FERRI SULPHAS.

**FERROUS SULPHATE.**

$\text{FeSO}_4 \cdot 7\text{H}_2\text{O}$ , eq. 276·10.

Large, translucent, pale green, odourless, monoclinic prisms, having a saline, astringent, ferruginous taste.

**Ferrum Sulphuricum Præcipitatum** (*Austr. Add.*), resembles the Ferri Sulphas Granulata of B.P. '85, omitted in 1898. It is obtained by pouring an aqueous solution of Ferrous Sulphate into Alcohol (90 p.c.).

**Solubility.**—1 in  $1\frac{1}{2}$  of Water; the solution rapidly oxidizes on exposure; insoluble in Absolute Alcohol or Alcohol (60 p.c.), hence it cannot be dissolved in Tinctures.

**Medicinal Properties.**—A powerful astringent and a haematinic tonic, but it is apt to irritate the stomach. Internally it is given in anaemia, amenorrhœa, and general debility; along with Quinine it promotes the appetite; given with cathartics, such as Magnes. Sulph. and Aloes, to increase their action, but at the same time reduce their dose; externally it is used as a lotion for ulcerated and erysipelatous surfaces, 3 to 5 grains in an oz. of Water; also as an injection for urethral and vaginal inflammations and prolapse of rectum.

**Dose.**—1 to 5 grains = 0·06 to 0·32 grammes.

**Prescribing Notes.**—Given in solution or more generally pill form, to avoid gastric irritation. The Dried Sulphate is best in pills; 3 grains, which are equal to 5 of the crystallised salt, make a nice pill with 'Diluted Glucose.'

*Liquor Ferri Persulphatis* is an excellent styptic.

2 grains of Ferrous Sulphate, 30 minimis of Magnesium Sulphate, 5 minimis of Diluted Sulphuric Acid, Chloroform Water or Peppermint Water to 1 oz.; occurs in hospital formulas as *Mistura Ferri Aperiens*.

**Official Preparations.**—Ferri Sulphas Exsiccatus and Liquor Ferri Persulphatis. See also 'Ferrum.'

**Not Official.**—Liquor Ferri Subsulphatis (Monsel's Solution), Gossypium Ferratum, and Ferri et Ammonii Sulphas.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap.**; also Crudum, Norw., Port., Russ., Span., Swed., Swiss and U.S., Mex., Sulfato Ferroso. *Austr. Add.* has a Precipitated Sulphate.

### **FERRI SULPHAS EXSICCATUS. EXSICCATED FERROUS SULPHATE. DRIED SULPHATE OF IRON.—B.P. '85.**

Ferrous Sulphate, submitted to a temperature of 212° F. (100° C.), until it ceases to lose aqueous vapour; reduce to a fine powder and keep in dry, well-stoppered bottles. It should be slowly but completely soluble in Water.

**Dose.**— $\frac{1}{2}$  to 3 grains = 0·032 to 0·20 grammes.

3 grains are equal to 5 grains of Ferrous Sulphate.

**Official in Belg.; Dan. and Swed.**, dried at 104° to 122° F.; Dutch; Ger. and Swiss, dried at 212° F; Russ.; U.S., dried at 300° F.

**LIQUOR FERRI PERSULPHATIS.** SOLUTION OF FERRIC SULPHATE.

Ferrous Sulphate, 16; Sulphuric Acid,  $1\frac{1}{2}$ ; Nitric Acid,  $1\frac{1}{2}$ ; Distilled Water, *q.s.* to make 22 of a reddish-brown liquid, sp. gr. 1.441, miscible with Water and Alcohol (90 p.c.).

Introduced for making several preparations of Iron, which are enumerated under 'Ferrum,' p. 270.

Official in Jap., Russ. and Swiss, sp. gr. 1.426 to 1.430; U.S., sp. gr. 1.320.

## Not Official.

**LIQUOR FERRI SUBSULPHATIS (U.S.).**—An aqueous solution of basic Ferric Sulphate, corresponding to 13.6 p.c. of Iron. It is known as **Monsel's Solution**.

**Monsel's Salt** is produced by evaporating and scaling the solution.

**GOSSYPIUM FERRATUM.**—Moisten Cotton Wool with Glycerin, then express strongly; steep the damp Wool in a solution of Ferrous Sulphate, 1 part to 2 parts of Water, squeeze out as much as possible of the liquid, and, without drying, pack the prepared wool into a bottle furnished with a glass stopper.

**FERRI ET AMMONII SULPHAS** (Ammonio-Ferric Alum).—Iron Alum is an Alum in which Iron takes the place of Aluminium. Pale violet octahedral crystals, which are efflorescent. Soluble 1 in 3 of Water, insoluble in Alcohol (90 p.c.). It is used in bleeding from the kidneys; it arrests the haemorrhage and the anaemia that accompanies it; it is considered more astringent than Alum.

The aqueous solution will, even after filtration, deposit unless slightly acidified with Diluted Sulphuric Acid.

**Dose.**—5 to 10 grains = 0.32 to 0.65 grammes.

**FERRUM REDACTUM.**

## REDUCED IRON.

A fine, tasteless powder, possessing a dull iron-grey metallic appearance, and strongly attracted by a magnet. It is Officially required to contain at least 75 p.c. of metallic Iron, with a variable amount of Iron Oxide. It is prepared by reducing Ferric Hydroxide, heated to dull redness, by a stream of dry Hydrogen.

With reference to the keeping qualities of Reduced Iron it may be noted that, under ordinary atmospheric conditions, a sample containing 91.5 p.c. of Iron, loosely covered with paper to keep out dust, lost only 1 p.c. of metallic Iron in a month.

**Medicinal Properties.**—Chalybeate and haematinic. Given in chlorosis and amenorrhœa.

As Hydrogen is evolved by its contact with the acid gastric secretion, flatulence may be set up.

**Dose.**—1 to 5 grains = 0·065 to 0·32 grammes.

**Prescribing Notes.**—*Given in powder, pill, or in lozenges. Pills containing Reduced Iron have a tendency to crack. An excellent pill can be made by mixing Reduced Iron 24 grains, Liquorice Powder 6 grains, Glycerin of Tragacanth 6 grains, and dividing into 12 or more pills as desired.*

**Official Preparation.**—Trochiscus Ferri Redacti.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

### TROCHISCUS FERRI REDACTI. REDUCED IRON LOZENGE.

1 grain of Reduced Iron in each, with Simple Basis.

**Dose.**—1 to 6 lozenges.

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### FERRUM TARTARATUM.

#### TARTARATED IRON.

Thin, deep ruby-red, translucent, slightly deliquescent scales, having a sweetish, ferruginous and astringent taste.

**Solubility.**—1 in 1 of Water (slowly); very sparingly in Alcohol (90 p.c.).

**Medicinal Properties.**—Chalybeate tonic, and slightly diuretic, suitable in the anaemia of convalescence.

**Dose.**—5 to 10 grains = 0·32 to 0·65 grammes.

**Official in Belg., Fr., Ital., Mex., Port., Russ., Span., Swiss and U.S.**

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### FICUS.

#### FIGS.

The dried fleshy Receptacles of *Ficus Carica*.

**Medicinal Properties.**—Nutritious, laxative, and demulcent. Chiefly used medicinally in constipation. Cut open and heated, it forms a convenient cataplasm.

**Official Preparation.**—Contained in Confectio Sennæ.

**Official in Fr. (Figue), Port., Span. (Higuera), and U.S.**

**Compound Syrup of Figs.**—Under this title several preparations are made, containing the soluble laxative constituents of Figs and Senna.

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**FILIX MAS.****MALE FERN.**

The Rhizome of *Aspidium Filix-mas*, collected late in the autumn, divested of its roots, leaves and dead portions, and carefully dried.

**Medicinal Properties.**—The powder of the rhizome is slightly tonic and astringent; chiefly used in the form of Liquid Extract as an anthelmintic for tapeworm.

**Prescribing Notes.**—*The Liquid Extract, which is an Oleo-resin, can be given in Milk, or made into an emulsion with 1 to 2 fl. drm. of very fresh Mucilage of Gum Acacia, or  $\frac{1}{2}$  to 1 drm. of powdered Acacia, and with Peppermint Water or Milk to form a 2 oz. draught; or in capsules.* Best given in the early morning fasting after a purge on the previous day. It is more effective if the dose of Male Fern be divided into three portions and given at intervals of half an hour. It should be followed by a brisk purgative to clear away the worm.

Under the headings Haustus, and Mistura, Filicis Maris, several formulas are given in the Pharmacopœias of the London Hospitals.

10 minimis of Tincture of Senega recommended for each fl. drm. of liquid extract, as an emulsifying agent.—P.J. '02, ii. 369.

**Official Preparation.**—Extractum Filicis Liquidum.

**Official in Austr., Belg., Dan., Dutch, Jap., Fr. (Fougère), Ger., Hung., Norw., Ital. (Felce Maschio), Port., Russ., Mex., Span. (Helecho Macho), Swed., Swiss and U.S. (Aspidium).**

**EXTRACTUM FILICIS LIQUIDUM. LIQUID EXTRACT OF MALE FERN.**

Male Fern exhausted by percolation with Ether, and subsequent evaporation of the Ether.

**Dose.**—45 to 90 minimis = 2·7 to 5·4 c.c.

For larger doses than 90 minimis, see L. '88, ii. 1037; B.M.J. '89, i. 319; and particularly as to mode of administration, L. '94, ii. 255.

U.S. states that the granular-crystalline substance, which deposits on standing, should be thoroughly mixed with the liquid portion before use.

The activity of the Extract is supposed to be due to **Filicic Acid**.—P.J. (3) xxii. 84; and this varies in different samples from 0·71 to 9·59 p.c., reaching in one sample 13·07 p.c.—P.J. '97, ii. 85.

3 p.c. of Aspidin,  $C_{23}H_{27}O_7$  has been extracted from the ethereal extract: it is poisonous, but nothing certain is known about its therapeutic effect.—P.J. '97, i. 288.

**Official in Austr., Belg., Dan., Dutch, Fr. (Extrait de Fougère**

Mâle), Ger., Hung., Ital., Jap., Norw., Port., Span., Swed., Swiss and U.S. All made with Ether.

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## FŒNICULI FRUCTUS.

### FENNEL FRUIT.

The dried ripe Fruit of *Fæniculum capillaceum*, collected from cultivated plants.

**Medicinal Properties.**—Stimulant, aromatic, and carminative. In action similar to Anise. Antispasmodic in intestinal colic of children.

**Official Preparation.**—Aqua Fœniculi. Uscd in the preparation of Pulvis Glycyrrhizæ Compositus.

**Not Official.**—Oleum Fœniculi.

**Official in Austr., Belg., Dan., Dutch, Fr. (Fenouil Doux), Ger., Hung., Jap., Norw., Ital. (Finocchio), Port. (Funcho), Russ., Mex. and Span. (Hinojo), Swed., Swiss and U.S.**

### AQUA FŒNICULI. FENNEL WATER.

Fennel Fruit, 1 ; Water, 20. Distil 10. (1 in 10)

**Dose.**—1 to 2 fl. oz. = 28·4 to 56·8 c.c.

**Official in Austr., 1 in 20; Fr., Ital., Mex. and Port., 1 in 4; Ger. and Russ., 1 in 30; Hung. and Swed., 1 in 10; Span., 1 in 6; Swiss, 1 in 25; Belg., with Oil, 1 in 3000; Dan., with Oil, 1 in 2000; Dutch, Jap. and U.S., with Oil, 1 in 500.**

### Not Official.

**OLEUM FŒNICULI.**—A colourless or slightly yellow liquid, possessing a peculiar characteristic odour and taste. It is distilled from Fennel Fruit, the yield of Oil varying from 4 p.c. to 6 p.c. Sp. gr. not less than 0·960. Between 5° and 10° C. it usually solidifies to a crystalline mass, but occasionally it remains liquid at a considerably lower temperature. The important constituent is Anethol.

The Oil from Japanese Fennel resembles closely that from the other varieties.—*P.J.* '96, ii. 91; *C.D.* '96, ii. 191.

Commercial varieties of Fennel and their essential oils.—*P.J.* '97, i. 225.

**Dose.**—5 to 15 minims = 0·3 to 0·9 c.c.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Jap., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

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Not Official.

### FORMIC ALDEHYDE.

METHANAL. METHYL ALDEHYDE.

Produced by the limited oxidation of Methyl Alcohol. A gas condensable by cold to a clear mobile liquid. The commercial article 'Formol' or 'Formalin' is stated to be a 40 p.c. solution.

**FORMALDEHYDUM SOLUTUM (Ger.).**—A clear colourless fluid, with an irritating odour, containing about 35 p.c. of Formaldehyde. Sp. gr. 1·079 to 1·081. Mixes readily with Water and Alcohol (90 p.c.), but not with Ether.

Official in Austr. Add., Dutch Supp., Ger., Ital. and Swed.

**Medicinal Properties.**—The strong solution (35 to 40 p.c.) is a powerful antiseptic, disinfectant and deodorant; it is also a powerful caustic, and should be handled with care. The vapour is irritating to the eyes and nose, probably due to traces of Formic Acid. Even in very dilute solution, 1 of Formic Aldehyde in 20,000, or 1 of Formalin in 8000, it possesses considerable antiseptic power, and will preserve liquids otherwise liable to change. The 35 p.c. Solution diluted with 50 to 100 of Water, may be used as a general antiseptic in the sick room for washing the hands, spray, etc., and with 400 to 500 of Water as an antiseptic mouth wash or gargle.

Case of poisoning by drinking 4 oz. of a 4 p.c. solution.—*P.J.* '99, ii. 295.

Formalin (40 p.c.) in 2000 to 3000 of Water used freely to hypopyon ulcers, and septic abrasions of the cornea.—*B.M.J.* '96, i. 144.

2 p.c. solution in ringworm.—*B.M.J.E.* '94, ii. 103; *Y.B.T.* '95, 394.

40 p.c. solution applied to ringworm.—*B.M.J.* '96, ii. 650.

40 p.o. solution sometimes causes suppuration, and is not so useful for ringworm as Carbolic Acid.—*B.M.J.* '97, i. 972.

Formic Aldehyde has received considerable attention as a therapeutic agent in the treatment of pulmonary tuberculosis, and has been employed both intravenously and as an inhalation. Maguire in his Harveian lectures recommends a solution of 1 part Formic Aldehyde Gas in 2000 parts of a sterilised solution of Sodium Chloride.—*Trans. of Brit. Cong. on Tuberculosis*, vol. iii. p. 438; *L.* '00, ii. 1549, 1633, 1709; '01, i. 629, 707; '01, ii. 310; '03, i. 98; '03, ii. 463; *B.M.J.* '00, ii. 1566, 1637, 1695.

**Intravascular antisepsis.**—Experiments show that at present there is no evidence which would warrant that the course of a septicaemia in animals can be favourably influenced by the intravenous injection of an antiseptic.—*L.* '03, i. 98.

As an inhalation, it has been used with good results in tuberculosis, pertussis and diphtheria.  $2\frac{1}{2}$  to 6 p.c. solutions of Formalin in pure Water or in 10 to 20 p.c. Glycerin solution is a con-

venient strength to employ, and should there be more than usual sensitiveness in the air-passages, a little Aromatic Spirit of Ammonia may be added.

A solution of Formalin 1, Chloroform 1, Alcohol (90 p.c.) 2, has also been used ; or it may be used as a fine spray at a strength of 6 to 10 p.c. solution mixed with Glycerin.—*B.M.J.* '99, i. 202, 772, 1440; '00, i. 139; '00, ii. 1624; '02, ii. 1692; *L.* '01, i. 468; '01, ii. 310; '02, ii. 562, 772; *Trans. of the Brit. Cong. on Tuberculosis*, vol. iii. p. 436.

Severe inflammation of the ends of all the finger nails caused by the prolonged use of a 1 in 500 solution of Formalin as a disinfectant for the hands.—*B.M.J.* '02, i. 54.

Recurrent papillomata of the larynx treated locally by Formalin as a 1 in 1000 increasing up to 1 in 100 spray.—*L.* '01, ii. 478.

A solution of equal parts Formalin and Glycerin used as a paint in the treatment of lupus.—*B.M.J.* '01, i. 1078; *B.M.J.E.* '01, ii. 48.

Cases of poisoning from swallowing commercial Formalin.—*B.M.J.E.* '01, i. 9, 72.

A few drops of Liquor Ammoniae Fort. well diluted with Water, or still better Liquor Ammouii Acetatis, given at frequent intervals as an antidote in cases of Formalin poisoning.—*B.M.J.E.* '01, ii. 7.

**Formic Aldehyde as a preservative of foods.**—It is generally condemned as a preservative of foods on account of its action on the flesh-forming constituents, rendering them insoluble. The proteids of milk containing Formalin fail to yield to the digestive action of Pepsin.—*L.* '99, i. 1507; '99, ii. 1282, 1427, 1577; '00, i. 228; *J.C.S. Abs.* '01, ii. 517; *B.M.J.E.* '02, i. 16.

Recommendation of the Departmental Committee appointed to enquire into the use of preservatives in food ; that Formaldehyde or any of its preparations be absolutely prohibited in food or drinks.—*L.* '01, ii. 1683; *B.M.J.* '01, ii. 1758; *P.J.* '01, ii. 620; *C.D.* '01, i. 880; *Analyst*, '01, 333.

**Formic Aldehyde as a disinfectant.**—There is no conflict of evidence as to Formaldehyde being a reliable disinfectant when used in solution, or used in the gaseous state for room disinfection when all objects are freely exposed, but it seems to be the general opinion that for the disinfection of heavy materials and furniture, or where there are many cracks or fissures, or the surfaces are not freely exposed, on account of its non-penetrative properties it is not so suitable as Sulphurous Acid Gas. It has the advantage, however, of being non-injurious to delicate fabrics such as furs, silks, etc.—*L.* '99, i. 1436; '02, i. 759; '03, i. 37; *B.M.J.* '99, i. 1280; '00, i. 1575; '00, ii. 1600; '02, i. 792; *B.M.J.E.* '00, i. 55; *T.G.* '99, 600.

Report of the practical experiments on disinfectants undertaken by the London County Council : both Formic Aldehyde and Sulphur Dioxide failed in the case of wood and cloth charged with spores ; in the case of tuberculous sputum dried on linen

and paper, Formaldehyde showed to greater advantage than Sulphur Dioxide.—*L.* '02, i. 759; *B.M.J.* '02, i. 792.

Formaldehyde in the state of vapour is able to destroy the bacilli in 'dried' sputum, but solutions of 4 to 10 p.c. did not affect 'ordinary' sputum.—*L.* '03, i. 37.

A paper by Kanthack on the use of Formalin lamps for the disinfection of rooms.—*L.* '98, ii. 1049.

The Aldehyde vapours are non-poisonous, but very irritating to the eyes and throat; they possess marked deodorant and disinfectant properties, and are well suited to the purposes of room disinfection, for they do not affect colours. The use of the reagent in a gaseous form appears to possess the advantages over disinfection by Sulphurous Acid, that it injures nothing except Iron, it diffuses better, and it possesses greater disinfectant power.—*B.M.J.* '98, i. 1542.

Muller's Fluid, containing 10 p.c. of Formol, has been recommended for hardening pathological specimens, but it deposits in five days and must be changed; 60 p.c. Alcohol, to which 1 p.c. Formol has been added, is a good preservative fluid after hardening in above.—*B.M.J.E.* '96, i. 88.

The 35 p.c. solution is diluted with 10 to 50 of Water, for fixing and hardening histological and pathological specimens, and for preserving them.

**GARGARISMA FORMALDEHYDI.**—Formalin, 1; Water to 1 oz. —*Guy's.*

**PARAFORMIC ALDEHYDE** (Paraform. Tri-oxy-methylene).—A white micro-crystalline or amorphous powder, insoluble in Water. It is a polymer of Formic Aldehyde; it volatilises at 100° C. (212° F.), and is readily convertible into that substance when heated to the above temperature in the presence of Water. It is used for disinfecting rooms.

**HEXAMETHYLENETETRAMINE.**—A white crystalline powder; Soluble 5 in 6 of Water, 1 in 8 of Alcohol (90 p.c.). The commercial varieties of this substance are known under the names of **Aminoform**, **Cystamine**, **Cystogen** and **Urotropine**.

Introduced as a urinary antiseptic; recommended in the treatment of cystitis and in phosphaturia.

**Dose.**—5 to 15 grains = 0.32 to 1 gramme, dissolved in Water or in Aerated Water.

Marvellous effects produced by its administration in doses of 10 grains thrice daily in cases of typhoid bacilluria and cystitis, for which conditions it appears to be an almost specific remedy.—*L.* '00, i. 707, 1059, 1876; '01, i. 174; '02, i. 687; *B.M.J.E.* '02, i. 95. 5-grain doses three times a day in cystitis with ammoniacal urine.—*L.* '00, i. 1653.

As an intestinal disinfectant.—*B.M.J.E.* '01, ii. 60.

In daily doses of 20 to 60 grains in diabetic coma.—*B.M.J.E.* '02, i. 72.

Two cases of haematuria following the use of from 5 to 10 grains

of the salt three times daily.—*B.M.J.* '01, i. 1473, 1617, 1659; *T.G.* '01, 617.

In the pyuria of tabes dorsalis 3 grains daily.—*L.* '03, ii. 1019. Official in Dutch Supp.

**AMYLOFORM.**—A white, amorphous, odourless powder, which is a compound of Formaldehyde with Starch. Insoluble in Water, but when brought in contact with moist surfaces it is slowly decomposed, giving off Formaldehyde. Recommended as a dressing or as a dusting powder.—*L.* '97, ii. 40; '00, i. 470; *T.G.* '00, 316; *P.J.* '03, i. 62.

**Dextroform** is a white powder, freely soluble in Water, slightly soluble in cold Glycerin, but dissolves 1 in 10 when warmed. It is a compound of Formaldehyde with Dextrine. It has been used internally, and has been given in the form of a 5, 10, or even 20 p.c. solution in gonorrhœa.

**Glutol** is a yellowish-white powder, insoluble in Water and Glycerin; it is a compound of Formaldehyde with Gelatin, used as an antiseptic dressing.

**HELMITOL** (Hexamethylenetetramine Anhydromethylene Citrate).—Colourless crystals, or as a white crystalline powder, soluble 1 in 5 of Water; sparingly soluble in Alcohol (90 p.c.); insoluble in Ether. Has been recommended in chronic posterior urethritis, cystitis and prostatitis.

**Dose.**—10 to 15 grains = 0·65 to 1 gramme, three times daily.

**SODIUM ANHYDROMETHYLENECITRATE** (Citarin).—A white granular amorphous powder, readily soluble in Water, practically insoluble in Alcohol (90 p.c.), and in Ether. It has been introduced in the treatment of rheumatism and gout, and as a solvent for uric acid calculi.

**Dose.**—15 to 30 grains = 1 to 2 grammes.

**URESIN** (Hexamethylenetetramine Di-Lithium Citrate).—A white, crystalline powder, readily soluble in Water; has been given in gout, and as a solvent for urinary deposits.

**Dose.**—5 grains = 0·32 gramme.

**Chinotropine** (Quinotropine) is a white powder, readily soluble in Water. It is a combination of Quinic Acid and Hexamethylenetetramine. Has been recommended to decrease the secretion of uric acid.—*B.M.J.E.* '01, ii. 95; *P.J.* '01, i. 666.

**Dose.**—10 to 15 grains = 0·65 to 1 gramme.

Under the name of **Igazol** a combination of Formic Aldehyde with Chloral, Terpene and Iodoform has been introduced for the treatment of pulmonary consumption, and is used as an inhalation.—*Trans. of Brit. Cong. on Tuberculosis*, iii. 416; *B.M.J.* '00, ii. 662.

**Lysoform** is a clear, colourless or pale yellowish, soapy liquid. Miscible with Water. Introduced as an antiseptic. A solution

to 2 tablespoonfuls to the pint is used to disinfect the hands.—*B.M.J.E.* '01, ii. 88; *L.* '03, ii. 1307.

**Carbol Lysoform** is stated to be a mixture of crude Carbolic acid and Lysoform, and to be a more active bactericide than either of its components.—*B.M.J.E.* '02, ii. 92; *P.J.* '03, i. 340.

### Not Official.

#### FUCUS VESICULOSUS.

Bladder-wrack collected from rocks by the seaside and dried.

**Medicinal Properties.**—Given to reduce obesity. It also diminishes tubercular glandular swellings.

Smelling fresh seaweed is said to relieve hay asthma.

The fluid extract has been given in *Companion* since 1867, and is now included in *B.P.C.*

**Official in** Fr., Varech Vesiculeux; Mex., Encina de Mar; Port., Bodelha; Span., Fuco Vejigoso.

**EXTRACTUM FUCI VESICULOSI** (*B.P.C.*).—Prepared by percolation with Alcohol (45 p.c.), and evaporation to a stiff extract.

**Dose.**—3 to 10 grains = 0·2 to 0·65 grammie, in pills.

**EXTRACTUM FUCI VESICULOSI LIQUIDUM** (*B.P.C.*).—Dissolve 1 of Extract of *Fucus Vesiculosus* in Alcohol (45 p.c.) to make 5.

**Dose.**—1 to 2 fl. dram. = 3·6 to 7·1 c.c.

#### GALBANUM.

##### GALBANUM.

A Gum-resin obtained from *Ferula galbaniflua*, and probably from other species.

The pure resin is probably a Galbaresinotannyllic salt of Umbelliferone.—*J.C.S. Abs.* '94, i. 423.

**Medicinal Properties.**—Similar to Asafetida, but less energetic; antispasmodic and stimulating expectorant. Chiefly used in chronic affections of the bronchial mucous membrane; externally as a plaster in chronic inflammatory swellings.

**Dose.**—5 to 15 grains = 0·32 to 1 grammie.

**Official Preparation.**—Pilula Galbani Composita.

**Not Official.**—Emplastrum Galbani and Unguentum Galbani Compositum.

**Official in** Austr., Belg., Dan., Dutch, Fr., Ger., Ital., Mex., Norw., Port., Russ., Span., Swed. and Swiss.

**PILULA GALBANI COMPOSITA.** COMPOUND PILL OF GALBANUM. *B.P.Syn.*—COMPOUND PILL OF ASAFETIDA.

Asafetida, 1; Galbanum, 1; Myrrh, 1; Syrup of Glucose, q.s. Mix together on a water bath.

**Dose.**—4 to 8 grains = 0·26 to 0·52 grammes.

The following modification will be found convenient for dispensing: powder the Myrrh, mix it with the Asafetida and Galbanum melted on a water bath, allow the mixture to cool, and after chilling it by artificial means reduce it to powder with  $\frac{1}{6}$  of its weight of Light Magnesium Carbonate. This powder will keep well, and can be made into pills as required with the aid of Alcohol (60 p.c.).

Official in Port., similar to Brit.; U.S., Asafetida 20, Soap 6.

**Not Official.**

**EMPLASTRUM GALBANI.**—Galbanum, 1; Ammoniacum, 1; melt together and strain; then add them to Yellow Beeswax 1, Lead Plaster 8, previously melted together. Mix. (1 in 11)

A plaster more or less resembling this is Official in all the Foreign Pharmacopœias except Hung. and U.S. Mex. has Emplasto de Galbano Azafranado. Dutch Supp. has an Emplastrum Galbani Crocatum.

**UNGENTUM GALBANI COMPOSITUM.**—Galbanum Plaster, 4 oz.; Lead Plaster, 4 oz.; White Beeswax, 4 oz.; soft Extract of Opium, 1 drm.; Olive Oil, 20 fl. oz. Melt together.

It is used for boils and carbuncles, and for sore nipples and inflamed breasts.

**Not Official.****GALIUM APARINE.**

CLEAVERS. GOOSE-GRASS.

This old remedy for scrofula still finds occasional notice. Besides its external application as a poultice to stimulate chronic ulcers, the general form of administration is the Juice of the plant in wineglassful doses several times a day, but as the Succus cannot be preserved without 25 p.c. of Alcohol (90 p.c.), the quantity of Alcohol involved would in many cases preclude its use. The most suitable preparation therefore is a Fluid Extract prepared from the fresh plant.

**GALLA.**

GALLS.

Excrescences on *Quercus infectoria*, resulting from the puncture and deposition of an egg or eggs of *Cynips Gallæ tinctoriae*.

Chiefly from Turkey, Persia and Greece.

Galls contain 60 to 70 p.c. of Tannin or Tannic Acid, and 3 to 5 p.c. of Gallic Acid, to which their therapeutic qualities may be attributed.

**Solubility.**—All the soluble matter of Galls is taken up by forty times their weight of boiling Water, and the residue is tasteless.

**Medicinal Properties.**—Astringent. Chiefly used locally in form of lotion or injection to suppress haemorrhage from the gums, nose, etc.; to lessen the discharge from mucous membranes, as in gleet, leucorrhœa, etc.; both Ointments are useful in haemorrhoids.

**Dose.**—10 to 20 grains = 0·65 to 1·3 grammes.

**Incompatibles.**—The mineral Acids, Iron and Lead salts, Copper Sulphate, Silver Nitrate, Potassium and Sodium Carbonates and Alkalies, Lime Water, Tartar Emetic, Ipecacuanha and Opium; Infusions of Cinchona, Calumba and Cusparia.

**Official Preparations.**—Unguentum Gallæ and Unguentum Gallæ cum Opio. Used in the preparation of Acidum Gallicum and Acidum Tannicum.

**Not Official.**—Decoctum Gallæ, Suppositoria Gallæ, and Tinctura Gallæ.

**Official in Austr., Belg., Dan., Dutch, Fr. (Galle de Chêne d'Alep), Ger., Hung., Ital. (Noci di Gala), Jap., Mex., Norw., Port., Russ., Span. (Agalla), Swiss and U.S.**

**ACIDUM GALLICUM.**—See ACIDUM GALLICUM.

**ACIDUM TANNICUM.**—See ACIDUM TANNICUM.

**UNGUENTUM GALLÆ.** GALL OINTMENT.

Galls, 1; Benzoated Lard, 4. (1 in 5)

Official in U.S., 1 in 5.

**UNGUENTUM GALLÆ CUM OPIO.** GALL AND OPIUM OINTMENT.

Opium, 7½ grains; Gall Ointment, 92½ grains. (about 1 in 13)

The ointment might be made direct by mixing 15 grains of Opium and 37 grains of Galls with 148 grains of Benzoated Lard.

**Not Official.**

**DECOCTUM GALLÆ.**—Bruised Galls, 2½; Distilled Water, 40; boil to 20, and strain. (1 in 8)

**SUPPOSITORIA GALLÆ.**—5 grains powdered Galls and 1 grain Opium in each, with a basis of Cocoanut Stearin.

**TINCTURA GALLÆ.**—1 of Galls percolated with Alcohol (60 p.c.) to yield 8.

**Dose.**—½ to 2 fl. dram. = 1·8 to 7·1 c.c.

Official in Austr., Dan., Dutch, Fr., Ger., Hung., Jap., Mex., Norw., Russ., Swiss and U.S., 1 in 5. All by weight, except U.S.

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### Not Official.

#### GARCINIA PURPUREA.

##### KOKUM BUTTER TREE.

Grows in the forests of Malabar, the Concans, and other parts of the Madras Peninsula.

The Oil of the seeds (*Kokum Butter*) is obtained by first exposing the seeds for some days to the action of the sun to dry; they are then bruised and boiled in water; the Oil collects on the surface, and on cooling contracts into a solid cake. It melts at 98° F. (36.6° C.). The seeds yield about 10 p.c. of Oil.

It is used in India in the preparation of ointments, suppositories, etc.

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#### GAULTHERIÆ OLEUM.

##### OIL OF WINTERGREEN.

Three nearly allied substances are sold as Oil of Wintergreen, and they are all Official in U.S.

**Oil of Gaultheria** (Wintergreen).—A volatile Oil distilled from the leaves of *Gaultheria procumbens*, consisting almost entirely of Methyl Salicylate, and nearly identical with Volatile Oil of Betula. A colourless or yellow liquid, with a strong characteristic odour, and a pungent taste. It deviates polarised light slightly to the left. Sp. gr. 1.175 to 1.185.

Official in the *Ind.* and *Col. Add.* for the North American Colonies.

**Volatile Oil of Betula** (Sweet Birch).—A volatile Oil obtained by distillation from the bark of *Betula lenta*. It is identical with Methyl Salicylate, and nearly identical with Oil of Gaultheria. It has the same properties and conforms to the same reactions and tests as Methyl Salicylate.

**Methyl Salicylas**, produced synthetically. A colourless or slightly yellowish liquid, with a characteristic odour and taste. A large proportion of the oil in commerce is synthetic Methyl Salicylate, or Artificial Oil of Wintergreen. Gaultheria Oil contains 99 p.c. and Birch Oil about 99.8 p.c. of Methyl Salicylate. Sp. gr. of both oils is between 1.180 and 1.187 at 15° C.

**Solubility.**—Readily soluble in Alcohol (90 p.c.), Ether, Chloroform, and Glacial Acetic Acid; only slightly soluble in Water.

**Medicinal Properties.**—A valuable remedy in acute rheumatism, internally; also externally, applied directly to the skin and covered with oiled silk or gutta-percha tissue, to prevent

evaporation; also mixed with equal parts of Olive Oil. Used largely as a flavouring agent in America, more particularly in dentifrices. It is a good antiseptic.

Methyl Salicylate is better for application to rheumatic patients than the Oil of Wintergreen. In all cases it was applied according to the process, become classic, of 50 to 100 drops poured upon a double fold of aseptic gauze, and covered by an impermeable material, applied for some hours, either to the forearm or to the leg, and renewed twice every twenty-four hours. The part treated with natural essence of Wintergreen was more or less red, painful, and covered sometimes with a rubeofliform eruption; pure Methyl Salicylate produced no such reaction.—*L.* '98, i. 52; *BM.J.E.* '00, i. 56.

As a dressing in the treatment of chorea, 6 to 10 grammes of the Oil either pure or mixed with Vaseline and covered with oiled silk to prevent evaporation.—*T.G.* '99, 240; *B.M.J.E.* '99, i. 8.

In subacute and chronic rheumatism it is stated to be of great advantage, employed either alone or in conjunction with Sodium Salicylate.—*T.G.* '99, 612; *B.M.J.E.* '99, i. 63.

**Dose.**—5 to 15 minims = 0·3 to 0·9 c.c. every four hours, when given as a substitute for Sodium Salicylate, but the taste is rather pungent.

**Prescribing Notes.**—When required to be made into an emulsion or pills, the same general rules would apply as for other Essential Oils, see '*Mucilago Acaciae*' and '*Pilulae*'; or it may be given in Capsules, containing 5 or 10 minims in each.

Official in Dutch Supp., Fr. and U.S.

**SPIRITUS GAULTHERIAE (U.S.).**—Oil of Gaultheria, 5; Alcohol, 95; both by measure.

**SANOFORM** (Di-iodomethylsalicylate).—A white crystalline powder, almost odourless and tasteless, melting at 110° C. It contains 62·7 p.c. Iodine. Introduced as a substitute for Iodoform in the treatment of wounds and ulcers.

**Solubility.**—Insoluble in Water and Glycerin; slightly soluble in cold Alcohol (90 p.c.), and readily in Ether.

**MESOTAN** (Salicylic Acid Methoxymethylester).—A yellow, oily liquid, possessing a slight aromatic odour. Insoluble in Water, readily soluble in Alcohol (90 p.c.), Ether and Chloroform. It is stated to be readily absorbed by the skin, and to be useful as a local application in all forms of rheumatic and gouty affections. It may be used as a 50 p.c. solution in Olive Oil, or by itself.—*B.M.J.E.* '03, i. 44.

**Methyl-acetyl-salicylate** is a crystalline powder, insoluble in Water, soluble in Alcohol (90 p.c.) and in Chloroform. Has been recommended in rheumatic affections.—*C.D.* '03, ii. 90.

**Amyl Salicylas.**—A colourless or slightly yellowish liquid, with a characteristic odour and taste. It is not nearly so pungent as Oil of Gaultheria, and therefore has been suggested as a substitute for the latter.

**GELATINUM.****GELATIN.**

The air-dried product of the action of boiling Water on such animal tissues as skin, tendons, ligaments and bones.

Commercial Gelatin varies considerably in its gelatinising power, and it is advisable to keep to the same brand to avoid alteration in formulas.

**Medicinal Properties.**—A powerful haemostatic and styptic. Has been used for increasing the coagulability of the blood.

A sterilised 1 to 2 p.c. solution in normal saline has been used with considerable success in the treatment of aortic aneurism.—*L.* '98, ii. 1092, 1299, 1369; '00, ii. 1500; '02, ii. 169, 558; '03, i. 591, 1810; *B.M.J.* '00, ii. 1071, 1499; '03, i. 1493; *B.M.J.E.* '02, i. 16, 91; *Pr.* lxvii. 577; *P.J.* '99, ii. 213; *C.D.* '01, ii. 442.

A method of preparing the sterilised solution (**Gelasepsin**) in flasks, and a description of a suitable apparatus for its use.—*B.M.J.* '01, 1415.

These flasks are supplied containing the requisite quantity of sterile Gelatin solution ready for use without further dilution.

Rectal injection of 250 c.c. of a 5 p.c. sterilised aqueous solution of Gelatin in the treatment of haemoptysis.—*L.* '03, i. 578.

Six samples of Gelatin examined, and tetanus spores found in four of them.—*L.* '03, i. 579.

Cases of tetanus terminating fatally following the subcutaneous injection of Gelatin solution.—*B.M.J.* '01, ii. 638, 741; *L.* '03, ii. 33; *C.D.* '01, ii. 382.

In melæna neonatorum.—*B.M.J.* '02, i. 28.

Contra-indicated in nephritis.—*B.M.J.E.* '00, ii. 71.

**Official Preparations.**—Used in the preparation of the Lamellæ and Suppositoria Glycerini, p. 309.

**Not Official.**—Gelatin Basis for Pessaries and Suppositories, Glyco-gelatin and Gelato-glycerin.

**Official in Austr., Dan., Dutch Supp., Fr., Ger., Hung., Mex., Port., Russ., Swed. and Swiss.** Swed. includes a white and an ordinary gelatin.

**Not Official.**

**GELATIN BASIS FOR PESSARIES AND SUPPOSITORIES.**—Soften 1 oz. of Gelatin by allowing it to soak in 1 fl. oz. of Water until it is absorbed, then dissolve in  $3\frac{1}{2}$  fl. oz. of Glycerin by the heat of a water-bath and allow it to cool and solidify. It can be medicated by melting it over a water-bath, and suspending or dissolving in it substances in fine powder, and then pouring the mixture into moulds.

**GLYCO - GELATIN.**—Refined Gelatin, 1 oz.; Glycerin (by

weight),  $2\frac{1}{2}$  oz.; Ammoniacal Solution of Carmine, a sufficiency; Orange-flower Water,  $2\frac{1}{2}$  fl. oz.—*Throat.*

Soak the Gelatin in the Water for 2 hours, then heat in a water-bath till dissolved; add the Glycerin and stir well together. Let the mixture cool, and when nearly cold add the Carmine Solution; mix till uniformly coloured, and set aside to solidify.

This mass is used for making the various medicated **Pastils**; the various substances are rubbed with an equal quantity of Glycerin, and added to the mass when melted over a water-bath.

**GELATO-GLYCERIN.**—Refined Gelatin (by weight), 5 oz.; Glycerin (by weight), 6 oz.; Water (by weight), 6 oz. Soak the Gelatin in the Water for 12 hours, with occasional stirring, add the Glycerin, dissolve in a water-bath, and evaporate to produce 15 oz. by weight of the Gelato-glycerin.

(For preparing Nasal Bougies.)

## GELSEMII RADIX.

### GELSEMIUM ROOT.

The dried Rhizome and Roots of *Gelsemium nitidum*.

The plant, Carolina Jasmine, grows in the Southern States of North America.

**Medicinal Properties.**—Antispasmodic and analgesic. Has been used in dental neuralgia, migraine, and especially in tic douloureux (neuralgia of fifth nerve); also in uterine and ovarian pain, spasmodic and asthmatic cough, and in chorea.

This drug should be used with care, and in the event of toxic symptoms presenting themselves, artificial respiration should be carried on.—*Pr. li. 50.*

**Official Preparation.**—Tinctura Gelsemii.

**Antidotes.**—Emetic of Mustard and Water, Atropine, Aromatic Spirit of Ammonia, Brandy, Nitro-Glycerin, and Digitalis. Artificial respiration should be kept up very steadily for at least three hours.

**Official in Belg., Dutch, Fr., Mex., Span., Swiss and U.S.**

An **Alcoholic Extract** is Official in Fr., and was also Official in B.P. '85. Dose,  $\frac{1}{2}$  to 2 grains = 0.032 to 0.13 gramme.

A **Fluid Extract** 1 in 1 is Official in U.S. Dose, 1 to 3 minims = 0.06 to 0.18 c.c.

The following constituents of *Gelsemium* have been described :

**Gelsemin.**—A name given to a resinoid and eclectic remedy, resembling the alcoholic extract.

**Dose.**— $\frac{1}{2}$  to 2 grains = 0.032 to 0.13 gramme.

**Gelsemine.**—The crystallisable alkaloid forming crystalline salts, described by Gerrard (*P.J.* (3) xiii. 641) and most unfortu-

nately listed by Merck under the name 'Crystallised Gelsemine.'

**Dose.**— $\frac{1}{120}$  to  $\frac{1}{32}$  grain = 0·00054 to 0·002 grammes.

When quite free from Gelseminine, with which all early specimens were probably mixed, **Gelsemine** is stated (*Pr. li. 38*) to be without action on *mammals*, even when injected intravenously up to  $\frac{1}{2}$  gramme =  $7\frac{1}{2}$  grains. Gelseminine, on the other hand, is intensely poisonous, causing a descending paralysis of the central nervous system,  $\frac{1}{2}$  grain = 0·032 gramme being the calculated lethal dose for an adult. Applied locally it produces dilatation of the pupil, and it is to the action of this alkaloid, modified by the various acid resins, that the action of Gelsemium Tincture is mainly due.

**Gelseminæ Hydrochloridum.**—Colourless crystals, soluble in Water.

**Dose.**— $\frac{1}{120}$  to  $\frac{1}{32}$  grain = 0·0005 to 0·002 grammes.

**Gelseminine.**—An amorphous alkaloid, forming amorphous salts, intensely bitter and poisonous.

**Gelsemic Acid** is not known to have any medicinal properties, but affords reactions, which to some extent serve as a test for Gelsemium preparations, particularly the blue fluorescence which it produces in alkaline solutions.

#### TINCTURA GELSEMIIL. TINCTURE OF GELSEMIUM.

1 of Gelsemium Root, in No. 40 powder, percolated with Alcohol (60 p.c.) to yield 10.

**Dose.**—5 to 15 minims = 0·3 to 0·9 c.c.

Swiss, maximum single dose, 1 gramme; maximum daily dose, 5 grammes.

Official in Belg. and Mex., 1 in 5; Dutch and Swiss, 1 in 10; U.S., 15 in 100. All by weight except U.S.

A girl 9 years old was killed in two hours by 2 fl. dram. = 7·1 c.c. of the Tincture.

#### GENTIANÆ RADIX.

##### GENTIAN ROOT.

The dried Rhizome and Roots of *Gentiana lutea*.

Collected in the mountainous districts of central and southern Europe.

The active principle **Gentiopicrin** is a neutral crystalline body, soluble in Water and diluted Alcohol, insoluble in Ether.

**Medicinal Properties.**—Bitter tonic; used in cases of atonic dyspepsia; the infusion is recommended in the vomiting of pregnancy, along with a mineral acid, or when a general tonic is required, as in convalescence from acute diseases or in nervous debility.

The Extract has been largely used as an excipient to form powders into pills.

**Official Preparations.**—Extractum Gentianæ, Infusum Gentianæ Compositum, and Tinctura Gentianæ Composita.

**Not Official.**—Mistura Gentianæ; Infusum Gentianæ Compositum Concentratum.

**Incompatibles.**—Ferrous Sulphate, Silver Nitrate, and Lead salts.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital. (Genziana), Jap., Mex. (Genciana), Norw., Port., Russ., Span., Swed., Swiss and U.S.**

### **EXTRACTUM GENTIANÆ. EXTRACT OF GENTIAN.**

An aqueous Extract of Gentian Root; made by maceration with cold Water for 2 hours, boiling for 15 minutes, and evaporation of the strained liquid.

**Dose.**—2 to 8 grains = 0·13 to 0·52 grammes.

**Official in Austr., Belg., Dan., Dutch, Fr., Ital., Jap., Mex., Port., Russ., Span., Swed. and U.S., with cold Water; Hung., with hot Water; Ger., Norw. and Swiss, with cold Water, and purified with Alcohol; Dan. and U.S., also Fluid Extract, 1 in 1.**

### **INFUSUM GENTIANÆ COMPOSITUM. COMPOUND INFUSION OF GENTIAN.**

Gentian Root,  $\frac{1}{4}$ ; Dried Bitter-Orange Peel,  $\frac{1}{4}$ ; Fresh Lemon Peel,  $\frac{1}{2}$ ; boiling Distilled Water, 20. Infuse 15 minutes. (1 in 80)

**Dose.**— $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 c.c.

**Official in Fr. (Tisane), Gentian Root 1, cold Water 200; Dutch Supp. and Swed., similar to Brit.**

### **TINCTURA GENTIANÆ COMPOSITA. COMPOUND TINCTURE OF GENTIAN.**

Gentian Root, 2; Dried Bitter-Orange Peel,  $\frac{3}{4}$ ; Cardamom Seeds,  $\frac{1}{4}$ ; macerated with 20 of Alcohol (45 p.c.). (1 in 10)

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

**Official in Mex., similar to Brit.; Port., twice as strong as Brit.; U.S., 1 in 10. Belg., Dan., Dutch, Fr., Ger., Ital., Jap., Mex., Norw., Port., Russ., Span. and Swiss, have a simple Tincture, 1 in 5. All by weight, except U.S.**

### **Not Official.**

**MISTURA GENTIANÆ.**—Gentian Root, sliced,  $\frac{1}{4}$  oz.; Bitter-Orange Peel, bruised, 30 grains; Coriander, 30 grains; macerated with 10 fl. oz. of Alcohol (20 p.c.), for 24 hours.

**Dose.**— $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 c.c.

Mixtura Amaro-alkalina (Gentian Mixture) is Official in Dan.

**INFUSUM GENTIANÆ COMPOSITUM CONCENTRATUM (B.P.C.).**  
 2 of Gentian Root, 2 of Dried Bitter-Orange Peel, and 1 of Dried Lemon Peel are macerated for 24 hours with 20 of Distilled Water, and pressed. Reserve 10, add 1 of Tincture of Lemon Peel, and 4 of Alcohol (90 p.c.). The marc is treated with two further 6 hours' macerations of Distilled Water 20, the liquors mixed, evaporated to 5, and added to reserve portion to make 20.

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

It is 8 times the strength of the B.P. Infusion.

The Tincture of Fresh Lemon Peel used in this preparation is obtained by macerating the grated outside Peel of Fresh Lemons 1, with Alcohol (90 p.c.) 2, and filtering.

### Not Official.

#### LIQUID GLUCOSE.

As met with in commerce, it is clear, almost colourless, devoid of smell, and resembles in consistence Canada Balsam. It should be free from Arsenic.

In exhausting diseases, subcutaneous injection of 25 grammes in 24 hours, equal to a litre of a 5 p.c. solution.—*B.M.J.* '02, i. 770.

It forms an excellent excipient for pills, more particularly when diluted with Syrup.

**DILUTED GLUCOSE.**—Glucose, 3 oz.; Syrup, 1 fl. oz.; mix.

A good excipient for pills.

The following, which is apparently introduced for this purpose, does not answer so well, as it is not sufficiently adhesive.

### Official Preparation.

#### SYRUPUS GLUCOSI. SYRUP OF GLUCOSE.

Liquid Glucose, 1; Syrup, 2. Mix at a gentle heat.

### GLUSIDUM.

#### GLUSIDE.

**BENZOYL SULPHONIMIDE.**  $C_7H_5NSO_3$ , eq. 181·77.

*B.P.Syn.*—GLUCUSIMIDE.

A white crystalline powder, possessing an exceedingly sweet characteristic taste.

*B.P.* melting point 426° to 428° F. (218·8° to 220° C.), but that given in *Fr. Supp.* 224° C. (435·2° F.) is nearer the correct figure for pure Gluside.

Commercial Saccharin is not a pure product, but is 'standardised' to 300 times the sweetening power of Cane Sugar, the pure chemical (Saccharin puriss.) to 500 times its weight of Sugar. The proportion of impurity may be estimated by treatment with Acetone, in which the pure salt is completely soluble.

Orthobenzoic sulphinide (commercial Saccharin) is put on the market as a white micro-crystalline powder containing a considerable proportion of Parasulphaminebenzoic Acid.

Commonly known as 'Saccharin.'

**Solubility.**—1 in 400 of cold Water; 1 in 28 of boiling Water; 1 in 30 of Alcohol (90 p.c.); 1 in 100 of Ether; 1 in 500 of Chloroform; 1 in 48 of Glycerin.

It is also readily soluble in all alkaline solutions, either of Hydrate, Carbonate, or Bicarbonate, acting the part of an Acid and displacing Carbonic Acid when present. See 'Soluble Saccharin.'

**Medicinal Properties.**—It is used as a substitute for Sugar in diabetes and hepatic diseases and corpulence, and to cover the taste of nauseous drugs. It is eliminated as Gluside in the urine and saliva.

1 grain sweetens 6 to 8 oz. of fluid.

**Dose.**— $\frac{1}{2}$  to 2 grains = 0·032 to 0·13 grammes.

**Not Official.**—Saccharinum Solubile, Elixir Glusidi and Tabellæ Saccharini (Saccharin Disks).

Official in Austr. Add., Dan., Dutch Supp., Fr., Ital., Norw. (Saccharinum), Mex. (Sacarina), Russ., Swed. and Swiss.

#### Not Official.

**SACCHARINUM SOLUBILE ('SOLUBLE GLUSIDE').**—A soluble Sodium Gluside, containing about 90 p.c. of Gluside. It is much more palatable than ordinary Gluside, which leaves a disagreeable after-taste.

This powder is soluble 1 in 15 of Water.

**ELIXIR GLUSIDI.** *Syn. ELIXIR SACCHARINI (B.P.C.).*—Dissolve 480 grains of Gluside with the aid of 240 grains of Sodium Bicarbonate in 10 fl. oz. of the Water, add  $2\frac{1}{2}$  fl. oz. of Alcohol (90 p.c.), filter, and wash the filter with Water to make 20 fl. oz. Each fl. dram. contains 3 grains of Gluside.

**Dose.**—5 to 20 minimis = 0·3 to 1·2 c.c.

**TABELLÆ SACCHARINI (SACCHARIN DISCS).**—Contain  $\frac{1}{2}$  grain = 0·032 gramme Saccharin in each. Should be readily soluble in Water, and should not contain starch or Sugar.

**Sucrol** (Dulcin).—Paraphenetol Carbonide is a powerful sweetening agent which occurs in small glistening crystals; it is said to possess about 200 times the sweetening power of Sugar.

## GLYCERINUM.

### GLYCERIN.

Glycerin, or Glycerol, is a Trihydric Alcohol,  $C_3H_8O_3$ , eq. 91·37, associated with a small percentage of Water; it is ob-

tained by the interaction of alkalis, or of superheated steam, with fats and fixed oils.

Glycerin is always produced during the alcoholic fermentation of Sugar to the extent of 3 p.c. of the Sugar employed, and consequently is present in all fermented liquids.

**Solubility.**—Mixes in all proportions with Water and Alcohol, but insoluble in Chloroform, Ether and Oils.

It possesses great powers as a solvent, and is an excellent excipient for many medicinal substances.

**Medicinal Properties.**—Undiluted it is an irritant, but when sufficiently diluted with aqueous menstrua it is said to be emollient. It is a mild laxative. Internally it is given in irritating cough; it is recommended as a **rectal injection** for constipation, 1 to 2 drm., or the same diluted with an equal quantity of Water, produces an evacuation very soon after the injection; also combined with Gelatin or Cocoa-nut Stearin to form a **suppository** for the same purpose; it is very convenient, but will aggravate haemorrhoids if present.

Externally in skin diseases, as pityriasis, eczema, psoriasis, prurigo and lichen. Used for chilblains and chapped hands, and dryness of the skin or mucous membranes, but it should be diluted with 3 parts of Water for these purposes. Used in poultices ( $\frac{1}{4}$  or  $\frac{1}{6}$ ) it keeps them soft for a long time.

It is useful in fermentative dyspepsia, when taken in 1 or 2 drm. doses, and does not hinder digestion.—*L.* '80, ii. 6; '96, ii. 25.

**Dose.**—1 to 2 fl. drm. = 3·6 to 7·1 c.c.

Smaller doses are usually prescribed.

**Prescribing Notes.**—*It is much employed as a sweetening agent in the place of Syrup, and is better for covering the unpleasant astringent taste of Iron Perchloride; it is largely used in pharmaceutical preparations as a solvent, and being an anti-septic it also acts as a preservative. Mixed with Syrup, Alcohol and Mucilage, it forms a good pill excipient. It is too hygroscopic to be used alone.*

**Official Preparation.**—Suppositoria Glycerini. Used in the preparation of Extractum Cinchonæ Liquidum, Extractum Sarsæ Liquidum, of all the Glycerina and Lamellæ, Linimentum Potassii Iodidi cum Sapone, Liquor Ethyl Nitritis, Liquor Thyrodei, Lotio Hydrargyri Nigra, Mel Boracis, Pilula Ferri, Pilula Quininæ Sulphatis, Syrupus Pruni Virginianæ, Tinctura Kino, Tinctura Rhei Composita, Unguentum Acidi Carbolicci, Unguentum Iodi, and Unguentum Sulphuris Iodidi.

**Not Official.**—Dispensing Syrup, Glycerin with Rose Water, Suppositoria Glycerini cum Stearino.

**Official in Austr. and U.S., sp. gr. 1·250; Belg., sp. gr. 1·240; Dan., Ger., Hung., Norw., Russ. and Swed., sp. gr. 1·225 to 1·235**

Dutch; Fr., sp. gr. 1·242; Ital., sp. gr. 1·226 to 1·260, also 1·234; Jap., sp. gr. 1·230 to 1·260; Mex., Port. and Span., sp. gr. 1·260; Swiss, sp. gr. 1·230 to 1·235.

### SUPPOSITORIA GLYCERINI. GLYCERIN SUPPOSITORIES.

Using a tared basin,  $\frac{1}{2}$  oz. of Gelatin, cut small, is covered with Distilled Water, which after 2 minutes is poured away. When the Gelatin is quite soft, dissolve in  $2\frac{1}{2}$  oz. of Glycerin on a water-bath, and then evaporate the excess of Water until the product weighs 1563 grains. The mass will contain about 70 p.c. of Glycerin. It may be moulded into any convenient size when required.

A similar preparation has been in use for many years (*Companion*, 1877) as a basis for medicated Pessaries and Suppositories. The formula in the *Companion* arrives at the same result (70 p.c.) without evaporation. It is easy by evaporation to obtain a product containing 80 p.c. of Glycerin. The consistency of the mass will vary somewhat with the quality of the Gelatin, see p. 302.

**Official** in Austr. Add. and U.S., Glycerin, Sodium Carbonate and Stéaric Acid; Dutch Supp., Glycerin and Medicated Soap.

**Glycerin Suppositories** are much more convenient to use when made with **Cocoa-nut Stearin**, see below.

### Not Official.

**DISPENSING SYRUP.**—Glycerin, Syrup, Alcohol (90 p.c.), and Mucilage of Acacia, equal volumes.

An excipient for pills. Glycerin by itself is too hygroscopic.

**GLYCERIN WITH ROSE WATER.**—Glycerin, 1; Rose Water, 3; mix.

**SUPPOSITORIA GLYCERINI C. STEARINO.**—Glycerin, 20 grains; Cocoa-nut Stearin, 40 grains; melt the Stearin, and when just fluid stir in the Glycerin and continue the stirring until the mixture becomes solid. Melt the mass with the least possible heat, and pour into moulds.

They can be used without any lubricant.

**UNGENTUM GLYCERINI.**—See GLYCERINUM AMYLI.

## GLYCYRRHIZÆ RADIX.

### LIQUORICE ROOT.

The peeled Root and peeled subterranean Stem of *Glycyrrhiza glabra*, and other species.

The principle **Glycyrrhizin** is comparatively tasteless, the characteristic sweetness being only developed by combination

with alkali. It exists in the drug as a combination with Ammonium.

**Medicinal Properties.**—A demulcent and expectorant in bronchial catarrh and cough. The liquid extract helps to disguise the taste of nauseous medicines, but many persons object to the taste of liquorice. In the form of extract and its solution it is a domestic remedy for cough. The compound powder is chiefly valuable on account of the senna and sulphur it contains, and is an agreeable and mild purgative, well adapted for weak persons and in case of haemorrhoids.

**Official Preparations of Liquorice.**—Of the Root, Extractum Glycyrrhizæ, Extractum Glycyrrhizæ Liquidum, Liquor Sarsæ Compositus Concentratus, Pilula Hydrargyri, and Pulvis Glycyrrhizæ Compositus; of the Extract, Confectio Sennæ and Decoctum Aloes Compositum; of the Liquid Extract, Mistura Sennæ Composita and Tinctura Aloes.

**Not Official.**—Elixir e Succo Glycyrrhizæ seu Elixir Pectorale, Glycyrrhizinum Ammoniatum, and Syrupus Glycyrrhizæ.

**Official in all the Foreign Pharmacopœias;** Belg., Dutch, Fr. (Réglisse), Ital. (Liquirizia), Jap., Ger., Mex. (Orozuz), Port. (Alcacus), Russ., Span. (Regaliz), Swiss and U.S., *G. glabra*; Austr., Dan. and Hung., both *G. Glabra* and *G. Echinata*.

#### **EXTRACTUM GLYCYRRHIZÆ. EXTRACT OF LIQUORICE.**

An aqueous extract, prepared by cold maceration, coagulation of Albumen at  $212^{\circ}$  F. ( $100^{\circ}$  C.), and subsequent evaporation to a soft extract.

**Dose.**—5 to 30 grains = 0·32 to 2 grammes.

**Official in Austr., Belg., Fr. (Ext. Réglisse), Hung., Ital., Jap., Mex., Port., Russ. and Span., from root with cold Water; Dutch and U.S., from root with Water and Ammonia.** The Crude Extract in sticks (*Succus Liquiritiæ*) is Official in Austr., Dan., Dutch, Fr., Ger., Hung., Ital., Norw., Russ., Swed., Swiss and U.S.; Depuratum from Crude Extract is Official in Austr., Belg., Dan., Ger., Hung., Norw., Swed. and Swiss.

Under the name Liquorice Juice, an aqueous extract is commercial in the form of sticks; Solazzi Juice is the best known brand.

#### **EXTRACTUM GLYCYRRHIZÆ LIQUIDUM. LIQUID EXTRACT OF LIQUORICE.**

An aqueous fluid extract, treated the same as for the extract, but evaporated to sp. gr. 1·2; to this is added  $\frac{1}{4}$  of its volume of Alcohol (90 p.c.).

**Dose.**— $\frac{1}{2}$  to 1 fl. drm. = 1·8 to 3·6 c.c.

The finished product is usually acid. Ammonia may be used

for preserving the sweet principle, but not for extracting it. So long as the alkalinity is maintained there is no falling of the dirty-looking deposit which is often seen at the bottom of the Fluid Extract of Liquorice bottle.

The Foreign Pharmacopœias use Ammonia in the extraction, which is an improvement.

**Official in Mex., Ammonia and Alcohol ; Swed., Ammonia and diluted Alcohol ; U.S., Liquorice Root percolated with a mixture of Ammonia Water and diluted Alcohol.**

### **EXTRACTUM GLYCYRRHIZÆ SPIRITUOSUM.**

Dissolve 10 of Extract of Liquorice in a small quantity of Distilled Water, add 5 of Alcohol (90 p.c.) and make up with Distilled Water to 20.

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

This is Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

**Extracta Liquida.**—Any Liquid Extract, defined in the Text of the Pharmacopœia, containing less than one-fourth of its weight of Alcohol (90 p.c.), may have the proportion of Alcohol (90 p.c.) increased, to an extent not exceeding one-fourth of the weight of the Extract, in India and other tropical countries where otherwise the preparation would be liable to ferment.

### **PULVIS GLYCYRRHIZÆ COMPOSITUS. COMPOUND POWDER OF LIQUORICE.**

*N.O.Syn.*—PULVIS LIQUIRITIÆ COMPOSITUS, PULVIS PECTORALIS KURELLÆ.

Senna, 2; Liquorice Root, 2; Fennel Fruit, 2; Sublimed Sulphur, 1; Refined Sugar, 6.

**Dose.**—60 to 120 grains = 4 to 8 grammes.

As a mild aperient, a teaspoonful or more for adults, less in proportion for children.

**Official in Austr., Dan., Dutch, Mex., Russ. and Swiss, formula the same; Belg., Dan., Ger., Norw., Swed. and U.S., almost the same.**

**Not Official.**

**ELIXIR E SUCCO GLYCYRRHIZÆ, seu ELIXIR PECTORALE, LIQUOR PECTORALIS (Dan., Ger., Norw., Russ., Swed. and Swiss).**—Purified Extract of Liquorice, 1; Fennel Water, 3; Anised Liquid Ammonia (p. 80), 1; (all by weight); mix.

**GLYCYRRHIZINUM AMMONIATUM (Fr. and U.S.).**—A scale preparation made by treating Liquorice Root with Water and Water of Ammonia, and adding Sulphuric Acid to the liquor so long as a precipitate is produced; collect this and wash it with cold Water; redissolve in dilute Ammonia and spread on glass plates to dry.

An elegant substitute for Liquorice in mixtures which are neither Acid nor Alkaline.

**SYRUPUS GLYCYRRHIZÆ.**—Liquorice Root 4 is extracted with a mixture of Ammonia solution 1, and Distilled Water 20, for twelve hours, pressed, and the expressed liquid evaporated on the Water-bath to 2, mixed with Alcohol (90 p.c.), 2; and after standing twelve hours, filtered, and the filtrate made up to 20 with simple Syrup. (All parts by weight.)

**Official in Ger., Russ., Swed. and Swiss.**

The U.S. National Formulary Syrup is prepared by dissolving pure Extract of Liquorice 1, in Distilled Water 4, adding Sugar 5 $\frac{1}{2}$ , straining, adding Glycerin 1, and sufficient Water to produce 8.

### GOA POWDER.—See ARAROBA.

## GOSSYPIUM.

COTTON.

*B.P. Syn.*—COTTON-WOOL.

The Hairs of the Seed of *Gossypium Barbadense*, and of other species of *Gossypium*, freed from fatty matter. This is commonly known as **Absorbent Cotton-Wool**.

Cotton-Wool is medicated with Carbolic Acid, Salicylic Acid, Boric Acid, Eucalyptol, Thymol, Arnica, Glycerin, Iron Salts, Mercuric Chloride, Sal Alembroth, Iodine, Iodoform, and other substances.

**Official Preparation.**—Used in the preparation of Pyroxylin.

**Official in Dutch, Ger., Jap., Russ. and Swed.,** *Gossypium Depuratum*; Ital., *Cotone Assorbente*; Mex., *Algodon* and *Algodon hydrofilo*; Port., *Algodoxiro*; Span., *Algodon*; U.S.; Fr., *Coton*, not washed. Medicated Cottons have been inserted in Dutch and Mex.

**MOUTH AND NOSE PROTECTOR.**—For use in poisonous and injurious trades. Squire and Sons exhibited this respirator at the International Health Exhibition (1884), and obtained for it a bronze medal. It consists of layers of washed and sterilised Cotton-Wool placed between Perforated Zinc and Perforated Cardboard, formed into a pliable respirator which covers the mouth and nose.

**Gamgee Tissue or Absorbent Gauze and Cotton-Wool Tissue,** which consists of layers of absorbent Cotton-Wool enclosed in absorbent Gauze, is a favourite dressing, and is convenient for applying lotions.

**Tela Depurata.** Purified Mull (*Ger.*).—This mull should have

a breadth of 100 centimetres, and each square metre should weigh at least 30 grammes, and each square centimetre should contain at least 24 threads, when not otherwise ordered.

### GOSSYPII RADICIS CORTEX.

The Bark of the Root of *Gossypium herbaceum*, and of other species of *Gossypium*.

It is Official in the *Ind. and Col. Add.* for India, and the Eastern, North American, and West Indian Colonies.

**Medicinal Properties.**—The Tincture and Fluid Extract have been used in America, and occasionally in Europe, as a substitute for Ergot in labour, and to check metrorrhagia.—*L. '94, ii. 1298.*

**Official in Dutch Supp. and U.S.**

**DECOCTUM GOSSYPII RADICIS CORTICIS.** (*Ind. and Col. Add.*).—Boil 4 of Cotton Root Bark with 40 of Distilled Water until reduced to 20, strain and make up to 20.

**Dose.**— $\frac{1}{2}$  to 2 fl. oz. = 14·2 to 56·8 c.c.

For India and the Eastern, North American, and West Indian Colonies.

**EXTRACTUM GOSSYPII RADICIS CORTICIS LIQUIDUM.** (*Ind. and Col. Add.*).—A 1 in 1 fluid extract of Cotton Root Bark prepared by percolation, using as a menstruum first Alcohol (90 p.c.), containing 25 p.c. Glycerin, and finally Alcohol (90 p.c.)

**Dose.**—30 to 60 minims = 1·8 to 3·6 c.c.

For India and the Eastern, North American, and West Indian Colonies.

**Official in Dutch Supp. and U.S.**

**TINCTURA GOSSYPII.**—Dried Bark of the Root of the Cotton Plant in powder, 1; percolate with sufficient Alcohol (60 p.c.) to produce 4.

**Dose.**—1 fl. dram = 3·6 c.c.

### GRANATI CORTEX.

#### POMEGRANATE BARK.

The dried Bark of the Stem and Root of *Punica Granatum*.

The Pomegranate-root alkaloids are Pelletierine (Punicine), Iso-pelletierine (Isopunicine), Methylpelletierine (Methylpunicine), and Pseudopelletierine (Pseudopunicine). The first two constitute the Pelletierine of medicine, the last two are inactive. Pelletierine is a volatile liquid, but forms stable salts.

**Medicinal Properties.**—Astringent and anthelmintic. It is considered effective in expelling tapeworm; the dose

should be preceded by a purgative. Pelletierine Sulphate is used for the same purpose.

**Incompatibles.**—Alkalies, Lime Water, Metallic salts, Gelatin.

**Official Preparation.**—Decoctum Granati Corticis.

**Not Official.**—Extractum Granati, Pelletierinæ Sulphas, and Pelletierinæ Tannas.

**Official in Austr., Belg., Dan., Dutch, Jap., Fr. (Grenadier), Ger., Hung., Ital. (Melogranato), Port. (Romeira), Mex., Russ. and Span. (Granado), Swiss and U.S.**

**DECOCTUM GRANATI CORTICIS.** DECOCTION OF POMEGRANATE BARK.

Boil 4 oz. of Pomegranate Bark with 24 fl. oz. of Distilled Water for ten minutes, strain and wash the residue with Distilled Water, *q.s.* to yield 20 fl. oz. (1 in 5)

**Dose.**— $\frac{1}{2}$  to 2 fl. oz. = 14·2 to 56·8 c.c.

**Official in** Belg., 1 and 6, boil to 4; Fr. (Apozème), 1 and 12 $\frac{1}{2}$ , boil to 9; Ital., 1 in 50; Port., 1 and 7 $\frac{1}{2}$ , boil to 5; Span., 1 in 8.

**Not Official.**

An excellent remedy for tapeworm is as follows:—

Bruised Root-bark of Pomegranate, 2 oz.; Boiling Water, 24 fl. oz.; macerate for 24 hours, and then boil till reduced to 18 fl. oz. A third part early in the morning, a third part again in half an hour, and the remainder in another half-hour. A dose of Castor Oil should have been taken the previous morning, and solid food abstained from on that day. This rarely fails to bring away the entire worm in two hours, and the head at the thinnest end should be diligently sought for.

**EXTRACTUM GRANATI.**—Exhaust Pomegranate Root-bark with Alcohol (60 p.c.), distil off the Alcohol and evaporate to the consistence of an Extract.

10 of Root-bark yield 3 $\frac{1}{2}$  of Extract.

**Official in** Austr., Belg., Dutch, Fr., Hung., Port., Russ. and Span.

**PELLETIERINA.**—A colourless, oily liquid, having an aromatic odour, and becoming brown on exposure to the air.

**PELLETIERINÆ SULPHAS.**—A white, crystalline, non-hydroscopic mass, which should be preserved from the light.

**Dose.**—6 grains = 0·4 gramme, prescribed with 7 grains = 0·46 gramme of Tannic Acid.

The Pelletierine de Tanret has been improperly called Pelletierine Tannate, on account of its being a mixture of Pelletierine Sulphate and Tannin, but it is quite distinct from the true Tannate, which is an almost inert insoluble powder.

**PELLETIERINÆ TANNAS.**—A yellowish amorphous powder, prepared from Pomegranate Bark. Soluble 1 in about 700 of Water, 1 in 80 of Alcohol.

**Dose.**—5 to 8 grains = 0·32 to 0·52 gramme,

**Official in** Ital.

## GRINDELIA.

The Leaves and Flowering Tops of *Grindelia squarrosa* and *Grindelia robusta* from California.

It is now Official in the *Ind.* and *Col. Add.* for the Australasian and the North American Colonies.

**Medicinal Properties.**—Antispasmodic, expectorant, slightly diuretic. Has been recommended in asthma, hay fever, bronchitis, whooping-cough, laryngismus stridulus, and cystitis.

**Prescribing Notes.**—*The Liquid Extract, whether made by U.S.P., old B.P.C., or Ind. and Col. Add., has a peculiar, bitter, persistent taste, which requires a good deal of covering. The addition of Spirit of Chloroform, Syrup of Orange and Glycerin is useful for this purpose. The so-called 'Alkaline Fluid Extract of Grindelia,' which is now introduced into the Ind. and Col. Add. as Extraetum Grindeliæ Liquidum, mixes more readily with Water, and makes a better looking and more palatable draught than either of the others.*

Official in U.S.

### EXTRACTUM GRINDELIAE LIQUIDUM. LIQUID EXTRACT OF GRINDELIA.

Percolate 20 of Grindelia with Alcohol (90 p.c.) until exhausted, distil off the Alcohol, and add to the residue 10 of Distilled Water and 2 of Sodium Bicarbonate; stir together, and after the Extract is dissolved and the effervescence is over, add Distilled Water to make 15, and finally Alcohol (90 p.c.), *q.s.* to yield 20 of product.

**Dose.**—10 to 20 minims = 0·6 to 1·2 c.c.

This is Official in the *Ind.* and *Col. Add.* for the Australian and the North American Colonies.

The Official text directs the Sodium Bicarbonate to be previously added to the Distilled Water, but as it will not dissolve there is no point in it. This preparation deposits on keeping.

U.S. fluid Extract by percolation with Alcohol (94 p.c.).

**Not Official.**

**EXTRACTUM GRINDELIAE.**—An Alcohol (90 p.c.) percolate, distilled and evaporated to an Extract. 100 of Grindelia yield 15 of Extract.

**Dose.**—3 grains = 0·2 grammes, three times a day.

## GUAIACI LIGNUM.

### GUAIACUM WOOD.

The Heart-wood of *Guaiacum officinale*, or of *Guaiacum sanctum*.

Imported from St. Domingo and Jamaica.

**Medicinal Properties.**—See ‘Guaiaci Resina.’

Official in all the Foreign Pharmacopœias except Dan., Dutch Supp., Hung. and Swed.

## GUAIACI RESINA.

### GUAIACUM RESIN.

The Resin obtained from the Stem of *Guaiacum officinale*, or of *Guaiacum sanctum*.

On dry distillation it yields Guaiacol similar to that found in Creosote.

**Solubility.**—About 90 p.c. is soluble in Absolute Alcohol, Ether, Chloroform, Aromatic Spirit of Ammonia, and Alkaline solutions; almost insoluble in Petroleum Spirit.

**Medicinal Properties.**—Stimulant, diaphoretic, and alterative. It is employed in chronic forms of rheumatism and gout, especially in old people. It is used in acute tonsillitis, also in dysmenorrhœa, amenorrhœa, and syphilitic affections.

Generally prescribed in combination with other medicines.

It is innocuous, and might be taken for an indefinite period of time, and looked upon as a condiment rather than as a drug, as harmless as Ginger or any other condiment. Guaiacum possesses a considerable power, but less than Colchicum, in directly relieving patients suffering from gouty inflammation of any part; it might be given whenever there was but little fever. Guaiacum taken in the intervals of gouty attacks has a considerable power of averting their recurrence; in fact, it is a very powerful prophylactic. Guaiacum does not appear to lose its prophylactic power by long-continued use.—*L.* '96, i. 1494; *B.M.J.* '96, ii. 1325.

Confidence expressed in the efficacy of Guaiacum in many forms of chronic gout, in irregular gout, and also as a prophylactic of gout. It is best administered in the form of tablet, or as a cachet.—*B.M.J.* '00, i. 843.

10 grains in a tablespoonful of Malt Extract two or three times a day, beginning a week before menstruation is expected, given to relieve the pain.—*B.M.J.* '02, i. 1195.

**Dose.**—5 to 15 grains = 0·32 to 1 grammie.

**Prescribing Notes.**—*Tragacanth* is better for the powder of *Guaiacum Resin* in Mixtures; *Mucilage of Acacia* is best for the Ammoniated Tincture:—*Mucilage of Acacia*,  $\frac{1}{2}$  fl. oz.; *Ammoniated Tincture*, 6 fl. drm.; *Water* to 6 fl. oz.

**Incompatibles.**—Mineral Acids, Spirit of Nitrous Ether.

**Official Preparations.**—Of the Wood, used in the prepara-

tion of Liquor Sarsæ Compositus Concentratus; of the Resin, Mistura Guaiaci, Tinctura Guaiaci Ammoniata, Trochiscus Guaiaci Resinæ; used in the preparation of Pilula Hydrargyri Subchloridi Composita.

**Not Official.**—Confectio Guaiaci Composita, Pulvis Guaiaci Composita, Tinctura Guaiaci, and Trochiscus Guaiaci.

**Official in Austr., Belg., Dan., Dutch Supp., Fr. (Gayac Resine), Hung., Ital., Jap. and Norw. (Resina Guajaci), Mex. (Resina de Guayacan), Port., Span., Swed., Swiss and U.S.**

### MISTURA GUIACI. GUAIACUM MIXTURE.

Guaiacum Resin,  $\frac{1}{2}$  oz.; Refined Sugar,  $\frac{1}{2}$  oz.; Tragacanth in powder, 35 grains; mix these together intimately, then add gradually 20 fl. oz. of Cinnamon Water. (1 in 40)

Tragacanth now used instead of Gum Acacia. As stated in previous editions of the *Companion*, not only does Tragacanth give a more diffusible mixture, but the colour does not change so rapidly, nor to the same extent as it does when Acacia is used.

**Dose.**— $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 c.c.

### TINCTURA GUIACI AMMONIATA. AMMONIATED TINCTURE OF GUAIACUM.

Add 4 oz. of Guaiacum Resin in powder to 1 $\frac{1}{2}$  fl. oz. of Strong Solution of Ammonia, mixed with 16 fl. oz. of Alcohol (90 p.c.). After 48 hours, with occasional agitation, filter and add 30 minimis of Oil of Nutmeg and 20 minimis of Oil of Lemon. Wash the filter with Alcohol (90 p.c.) to make 20 fl. oz. of total product. (1 in 5)

**Dose.**— $\frac{1}{2}$  to 1 fl. drm. = 1·8 to 3·6 c.c.

**Official in U.S.**, similar to Brit.; Dutch Supp., Guaiacum Resin 1, Spirit 6, Liquid Ammonia (sp. gr. 0·960) 3; Port., Guaiacum Resin 3, Liquid Ammonia (sp. gr. 0·916) 3, Spirit 14; Swed., Guaiacum Resin 3, Aqua Ammoniæ (sp. gr. 0·960) 5, and Spirit 10; by weight.

### TROCHISCUS GUIACI RESINÆ. GUAIACUM RESIN LOZENGE.

3 grains of Guaiacum Resin in each, with Fruit Basis.

**Not Official.**

**CONFECTIO GUIACI COMPOSITA.**—Guaiacum Resin, 4 drm.; Sublimed Sulphur, 1 oz.; Mustard, 1 oz.; Rhubarb Root, 2 drm.; Potassium Nitrate, 2 drm.; Honey *q.s.*—*London*.

**PULVIS GUIACI COMPOSITA** ('Chelsea Pensioner').—Powdered Guaiacum Resin, Precipitated Sulphur, Heavy Magnesium Carbonate, Gum Acacia, Potassium Bicarbonate, of each equal parts. Dose.—20 to 40 grains.—*St. George's*.

**TINCTURA GUAIACI.**—Guaiacum Resin, 1; Alcohol (90 p.c.) 5.

**Dose.**—30 to 60 minims = 1·8 to 3·6 c.c.

**Official in Austr., Belg., Dan., Fr., Hung., Span. and U.S.** (Resin) 1 in 5; Belg., Jap., Port., Span. and Swiss (Wood), 1 in 5; Dutch Supp. (Resin), 1 and 9; all by weight except U.S.

Now included in *B.P.C.*

Along with Ozonic Ether it is employed as a test for the presence of blood.

**TROCHISCUS GUAIACI.**—2 grains of Guaiacum Resin in each with Black Currant Paste.—*Throat.*

### Not Official.

#### GUAIACOL.

A colourless liquid obtained by fractional distillation of Wood Creosote. It can also be obtained from Guaiacum Resin.

**Solubility.**—About 1 in 80 of Water; mixes in all proportions with Alcohol (90 p.c.), Ether, Glycerin, and the fixed Oils (Almond and Olive).

**Medicinal Properties.**—Used in the place of Creosote in the internal treatment of phthisis, in which it is better tolerated than Creosote. Also given in Olive Oil as an intralaryngeal injection. Has been also used in febrile diseases, phthisis, erysipelas, neuralgia, painful rheumatic joint affections, sciatica, orchitis, and pleurisy. Disadvantages from continued use are great exhaustion and profuse diaphoresis. Applied externally is antipyretic and analgesic.

General references:—*B.M.J.* '95, i. 24; '96, i. 586; ii. 1715; *B.M.J.E.* '95, ii. 27, 36, 56, 103; '97, i. 63; *L.* '95, i. 429, 817, 1452; '97, ii. 1649; '98, i. 993; *T.G.* '96, 333, 337, 365, 390; *P.J.* '95, ii. 134, 168, 363, 471.

Hypodermic injection of Guaiacol (undiluted) in phthisis.—*B.M.J.* '96, i. 586.

Administration of large doses (60 minims) in phthisis without toxic effects.—*L.* '98, i. 993.

A 10 to 20 p.c. ointment made with a lanolin or vaseline basis, in the treatment of gonorrhœal epididymitis.—*T.G.* '00, 145; *B.M.J.E.* '00, i. 92; '02, ii. 20.

Guaiacol vapour baths in the treatment of bronchiectasis.—*L.* '99, ii. 210.

**Dose.**—1 to 5 minims = 0·06 to 0·3 c.c.

**Prescribing Notes.**—It is generally given (mixed with Almond Oil) in capsules, but it has also been given in Mixtures with Glycerin and Water, and flavoured with either Compound Tincture of Lavender, Oil of Cinnamon, or Compound Tincture of Gentian. But it can be treated in the same way as Creosote both as regards Mixtures and Pills.

**Official** in Dutch Supp., Fr. Supp. (Gaiacol), Ital., Russ. and Swiss.

**GUAIACOL** (Synthetic).—A crystalline substance which melts at about 28° C. (82.4° F.), but frequently remains liquid much below this temperature. It is said to yield more uniform results than the ordinary medicinal liquid Guaiacol, which is not so definite in composition. Soluble 1 in 50 of Water.

**Dose.**—1 to 5 grains = 0.06 to 0.32 grammes.

**GUAIACOL BENZOATE** (Benzosol).—A white crystalline powder, having an aromatic taste and odour. Almost insoluble in Water. Melts at 50° to 52° C. A non-irritating form of Guaiacol, which has been recommended in phthisis and in diabetes.—*M.P.* '94, i. 269; *L.* '96, ii. 551; *P.J.* '96, ii. 59.

**Official** in Dutch Supp.

**Dose.**—5 to 10 grains = 0.32 to 0.65 grammes; usually given in *cachets* or *tablets*.

**GUAIACOL CAMPHORATE** (Guacamphol).—Colourless needles or a white, or nearly white powder, having an aromatic odour. Insoluble in Water; soluble in cold, readily soluble in hot Alcohol (90 p.c.), and in Chloroform. It has been used with success in checking the night sweats of phthisis.—*C.D.* '01, ii. 344.

**Dose.**—5 grains = 0.32 grammes.

**GUAIACOL CARBONATE** (Duotal).—A white crystalline powder, inodorous and tasteless. Insoluble in Water; soluble about 1 in 70 of Alcohol (90 p.c.). It is not acted upon by caustic alkalis.

**Official** in Dutch Supp., Ital. and Russ.

Recommended as a non-irritating form of administering Guaiacol in phthisis.—*B.M.J.E.* '92, i. 8; '93, ii. 83; '95, i. 8; *L.* '96, ii. 1374; '98, i. 222, 960.

**Dose.**—3 to 10 grains = 0.2 to 0.65 grammes, which may be gradually increased to 60 grains = 4 grammes.

**GUAIACOL CINNAMATE** (Styracol).—Colourless, crystalline needles, almost insoluble in Water; soluble in Alcohol (90 p.c.) and in Chloroform. Has been recommended in the treatment of pulmonary tuberculosis, and also in cystitis and gonorrhœa.

**Dose.**—5 grains = 0.32 grammes, 3 times daily.

**GUAIACOL PHOSPHATE**.—A white, crystalline powder, insoluble in Water; soluble in Alcohol (90 p.c.) and in Chloroform. Is stated to have been found useful in tuberculosis and in typhoid fever.—*L.* '02, i. 1711.

**Dose.**—1½ to 3 grains = 0.1 to 0.2 grammes three or four times daily.

There is also a crystalline **Guaiacol Phosphite**, dose, 5 to 10 grains = 0.32 to 0.65 grammes.

**GUAIACOL VALERIANATE** (Geosote).—A yellowish, oily liquid, almost insoluble in Water. Has been used in the treatment of tuberculosis, of bronchial affections, and in diarrhoea.—*L.* '97, ii. 932; *B.M.J.E.* '98, i. 75; *P.J.* '97, i. 425.

**Dose.**—2 to 3 minims = 0.12 to 0.18 c.c. or more.

**GUAIACETIN** (Sodium Pyrocatechin-monoacetate).—A white, crystalline powder, having a faint odour and taste of Guaiacol. Soluble in Water; insoluble in Alcohol (90 p.c.). It has been recommended in the treatment of tuberculosis.—*Pr.* lxii. 704.

**Dose.**—4 to 8 grains = 0·25 to 0·5 grammes three or four times daily.

**GUAIACYL** (Calcium Ortho-guaiacon-sulphite).—A greyish or greyish-mauve powder. Readily soluble in Water and in Alcohol (90 p.c.). A 5 to 10 p.c. solution has been found useful as a local anaesthetic.

**Dose.**—0·5 to 1·5 c.c. of a 5 p.c. solution; 1 c.c. of a 10 p.c. solution.

**GUAIAFORM** (Geoform).—A yellow or brownish-yellow, tasteless powder, insoluble in Water, soluble in Alcohol (90 p.c.), and in Ether. Stated to be a non-irritating preparation, and likely to be of use in pulmonary tuberculosis and typhoid fever. The Tannic Acid compound is known as “Tannoguaiaform.”—*L.* '02, i. 912; *P.J.* '02, i. 61.

**THIOCOL** (Potassium-Guaiacon-Sulphonate).—White, glistening crystals. Readily soluble in Water; insoluble in Alcohol (90 p.c.). Has been recommended in phthisis and tuberculosis. Stated not to irritate the mucous membrane.—*L.* '99, i. 240; *B.M.J.E.* '01, i. 16; *P.J.* '01, ii. 645.

**Dose.**—10 to 20 grains = 0·65 to 1·3 grammes three times a day.

The somewhat bitter taste of Thiocol may be disguised by Syrup of Orange. A Syrup containing 6 grains of Thiocol in each ounce is known under the name of “Sirolin.”—*C.D.* '03, i. 923.

**Aphthisin** is stated to be a mixture of Potassium-Guaiacon-Sulphonate and Ammonium Sulphichthyolate.—*P.J.* '02, ii. 137.

Among the various other compounds containing Guaiacol which have received attention in medical literature are: **Euguform** (Acetyl-methylene-diguaiacol), a greenish-white powder, insoluble in Water, antiseptic and anaesthetic, recommended as a dusting powder; also a 50 p.c. solution in Acetone; **Guaiacol Cacodylate**, a dangerously unstable salt, recommended subcutaneously in  $\frac{1}{2}$  to  $\frac{1}{4}$  grain doses in tuberculosis; **Guaikinol** (Quinine-di-bromo-guaiaconate), yellow crystals, readily soluble in Water, recommended for external use in erysipelas; **Guaiquin** (Quinine Guaiacol-bi-sulphonate)—a yellow powder, readily soluble in Water, introduced as a substitute for Guaiacol; **Guaiamar** (Glycerol-ester of Guaiacol), a white, non-hygroscopic crystalline powder, used as an antiseptic (dose, 5 to 10 grains); **Guaiasanol** (Diethylglycocol-Guaiaconol), a white crystalline powder, readily soluble in Water, used as an antiseptic; **Guaiacol Salol** (Guaiacol Salicylate), a white crystalline powder, insoluble in Water, soluble in Alcohol (90 p.c.), recommended in phthisis.

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## Not Official.

## GUARANA.

The Seeds of *Paullinia Cupana* dried in the sun, and then roasted and reduced to a fine powder; this is moistened with a little Water, exposed to the night dew, and when it has become a hard paste is rolled into cylinders; these are further dried in the sun or in the chimneys of the huts. It is exported from Brazil.

True Guarana is very hard, heavy, and, when powdered, is reddish-grey, whilst the sophisticated is much lighter in colour; it contains about 4 p.c. of an alkaloid **Guaranine** (dose, 1 to 5 grains = 0·06 to 0·32 grammes), generally considered to be identical with Caffeine.

**Medicinal Properties.**—Nervine tonic. It is used chiefly for curing sick headache, but is also useful in diarrhoea, dysentery, and as a tonic and stomachic in convalescence.

**Dose.**—10 to 60 grains = 0·65 to 4 grammes infused in boiling Water and sweetened, and repeated if necessary in two hours.

**Official in Austr., Belg., Dutch Supp., Fr., Hung., Ital., Mex., Port., Span., Swiss and U.S.**

**ELIXIR GUARANÆ (B.P.C.).**—Guarana, in No. 60 powder, 4 oz.; Light Magnesia,  $\frac{1}{2}$  oz.; Oil of Cinnamon, 6 minims; Syrup, 2 fl. oz.; Alcohol (60 p.c.), q.s. to produce 20 fl. oz.

**Dose.**—30 to 120 minims = 1·8 to 7·1 c.c.

**EXTRACTUM GUARANÆ FLUIDUM (U.S.).**—1 equals 1 of Guarana; made with Alcohol (94 p.c.), 3; Water, 1.

**Dose.**—1 to 2 fl. dram. = 3·6 to 7·1 c.c.

**TINCTURA GUARANÆ.**—Guarana, in fine powder, 1; Alcohol (60 p.c.) q.s., to produce 4.

**Dose.**—30 to 120 minims = 1·8 to 7·1 c.c.

## GUMMI INDICUM.

## INDIAN GUM.

A gummy exudation from the Wood of *Anogeissus latifolia*, is Official in *Ind.* and *Col. Add.* for India and the Eastern Colonies, and may be there used in making the Official preparations for which Gum Acacia is directed to be used, one part of the former being taken for every two parts ordered of the latter.

GUMMI RUBRUM.—*See EUCALYPTI GUMMI.*

Not Official.

### GUTTA PERCHA.

Tough, somewhat flexible pieces, of a light brown or chocolate colour, which become hard and brittle on keeping, but they can be softened again in warm water.

The concrete Juice of *Dichopsis Gutta*, and of several other trees of the natural order Sapotaceæ.

It was Official in *B.P.* '85, but is replaced in *B.P.* '98 by Caoutchouc, a solution of which is now used for Charta Sinapis.

**Solubility.**—Almost entirely soluble in Chloroform, yielding a more or less turbid solution. Entirely soluble in Oil of Turpentine, Carbon Bisulphide, and Benzol. Insoluble in Water, Alcohol, alkaline solutions, or dilute acids.

**Medicinal Properties.**—Used for making splints; as Gutta Percha tissue for keeping surgical dressings moist; as a solution for mixing with medicaments for chronic skin diseases, and applying like Collodion.

Official in Dutch Supp., Fr., Ger., Hung., Jap., Port., Span. and Swed.; Swed. has also Gutta Percha laminata.

**LIQUOR GUTTA PERCHA (B.P. '85).**—Gutta Percha, in thin slices, 1; Chloroform, 8; Lead Carbonate, in fine powder, 1, Add the Gutta Percha to 6 of the Chloroform in a stoppered bottle, and shake them together frequently until solution has been effected. Then add the Lead Carbonate previously mixed with the remainder of the Chloroform, and having several times shaken the whole together, set the mixture aside, and let it remain at rest until the insoluble matter has subsided. Lastly, decant the clear liquid, and keep it in a well-stoppered bottle.

Official in Jap.

**TRAUMATICINE.**—A solution of 1 of Gutta Percha tissue in 10 (by weight) of Chloroform. It produces a thin delicate film when painted on the skin, and causes neither tension nor pain. It is used for medicated applications.—*P.J.* (3) xiv. 341. A vehicle for the administration of Mercury in syphilis.—*L.* '94, ii. 590.

Official in Fr. Supp., 1 and 9 (by weight); *B.P.* '85, Liquor Gutta Percha, 1 and 8 (by measure).

**UNNA'S PLASTER MULLS** consist of a very thin sheet of Gutta Percha coated on one side with an adhesive substance (Aluminium Oleinicum) containing one or more medicinal substances, and backed on the other side with Mull (undressed muslin).—*L.* '86, ii. 575.

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### GYNOCARDIÆ OLEUM.

#### CHAULMUGRA OIL.

A brown or brownish-yellow, semi-solid Oil, obtained from the Seeds of *Gynocardia odorata*, a native of the forests of the Malayan

peninsula and Eastern India, as far north as Assam, extending thence along the base of the Himalayas as far west as Sikkim. The oil has been long known and used in India; it has a disagreeable taste and smell, and can be readily melted by a gentle heat.

It is Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

**Medicinal Properties.**—It has been recommended in the treatment of leprosy; also as an external application in psoriasis, obstinate eczema, and other skin diseases, chronic rheumatism and gout, and in phthisis.

In leprosy.—*B.M.J.E.* '93, ii. 4; '01, ii. 79.

4 minims in capsule three times daily in leprosy, dose increased until 50 capsules per diem were taken.—*L.* '02, ii. 1196.

**Dose.**—5 to 10 minims = 0·3 to 0·6 c.c., gradually increased to 30 to 60 minims = 1·8 to 3·6 c.c. three or four times a day; should be given after meals in Milk or emulsion with Gum Acacia, or better still in capsules.

**Gynocardic Acid.**—Chaulmugra Oil contains about 12 p.c. of an active principle, Gynocardic Acid, the dose of which is  $\frac{1}{2}$  grain in pill three times daily, gradually increasing to 2 grains.

**Magnesium Gynocardate.**—A granular powder.

**Dose.**—1 to 3 grains = 0·06 to 0·2 gramme.

**UNGUENTUM GYNOCARDIÆ** (*Ind.* and *Col. Add.*).—A 10-p.c. ointment of Gynocardia Oil in a mixture of 4 of Hard and 5 of Soft Paraffin.

For India and the Eastern Colonies.

## HÆMATOXYLI Lignum.

### LOGWOOD.

The Heart-Wood of *Hæmatoxylon Campechianum*.

Imported from Campeachy in Central America, from Honduras and Jamaica, that from Campeachy being the most valuable.

**Medicinal Properties.**—Astringent, without irritating properties, useful in diarrhoea of phthisis and chronic diarrhoea and dysentery, and in passive haemorrhages; in infantile diarrhoea; it does not tend to cause subsequent constipation. Also as an injection for leucorrhœa.

**Incompatibles.**—Mineral Acids, metallic salts, Lime Water, Tartar Emetic.

**Official Preparation.**—Decoctum Hæmatoxyli.

**Not Official.**—Extractum Hæmatoxyli, Extractum Hæmatoxyli Liquidum, and Hæmatoxylin.

**Official in Austr., Belg., Fr. (Bois de Campêche), Mex., Port. and U.S.**

**DECOCTUM HÆMATOXYLI.** DECOCTION OF LOG-WOOD.

Boil 1 oz. of Logwood in chips, with 24 fl. oz. of Distilled Water, adding 70 grains of bruised Cinnamon Bark towards the end of the process; strain, and wash with Distilled Water to make 20 fl. oz. (1 in 20)

Iron vessels should not be used.

**Dose.**— $\frac{1}{2}$  to 2 fl. oz. = 14·2 to 56·8 c.c.

## Not Official.

**EXTRACTUM HÆMATOXYLI.**—Logwood, in fine chips, 1; boiling Distilled Water, 10; infuse twenty-four hours, boil to 5, strain and evaporate to dryness by a water-bath, stirring with a wooden spatula. Iron vessels should not be used.

**Dose.**—10 to 30 grains = 0·65 to 1·94 gramme.

Official in Belg. and U.S.

**EXTRACTUM HÆMATOXYLI LIQUIDUM (B.P.C.).**—Boil 20 of *Unfermented* Logwood, in No. 16 powder with 40 of Distilled Water for half an hour, and strain; repeat the process with 40 more of water, and again for the third time, and having mixed the strained liquors, evaporate over a water bath (or preferably in *vacuo*) to the measure of 17 and add 3 of Alcohol (90 p.c.); allow it to settle for a week, then draw off the clear liquor from the sediment.

**Dose.**—30 to 120 minimis = 1·8 to 7·1 c.c.

**HÆMATOXYLIN** ( $C_{16}H_{14}O_6$ ).—Yellow or yellowish-brown glistening, rhombic crystals, sparingly soluble in cold Water, readily in Alcohol and Ether. It has a sweet taste, without astringency. Used as a nuclear stain for histological and pathological sections.

The crystals, when prismatic, contain 3 molecules of Water of crystallisation; when granular, 1 molecule.

## Not Official.

**HÆMOGLOBIN.**

The substance to which in one or other of its modifications the blood owes its colour, and is the chief solid constituent of the blood corpuscles. Has been given with considerable success in the treatment of anæmia. It readily combines with free oxygen to form **oxyhæmoglobin** or hæmato-crystallin. It has been prepared in the form of crystals, but its preparation in this form is attended with some difficulty on account of its ready solubility in water. A colloidal form is also known as **colloidal hæmoglobin**. L. '02, i. 910; *B.M.J.* '02, i. 738.

It occurs in commerce as an **Extract** (Pfeuffer's), in **Scales** (Merck) and as a dry powder, **Sanguis Bovinus Exsiccatus**, defibrinated and desiccated ox blood.

**HÆMATOGEN.**—An aromatic fluid preparation, stated to contain pure haemoglobin, the salts of the blood, the albuminous constituents of the serum, and glycerin.—*L.* '99, ii. 388.

**Official in Dutch Supp.**

Under the name of **Sicco**, a solid preparation of haematogen has been introduced. It is a brownish-black powder, soluble in Water.

**LIQUOR HÆMOGLOBIN CO.** (Vinsip).—A fluid preparation stated to contain haemoglobin, and the albuminous constituents of the blood.—*L.* '01, ii. 735.

**HÆMOL.**—A dark brown powder, slightly soluble in Water, produced by the action of reducing substances, e.g. zinc dust, on the colouring matter of the blood.

**Dose.**—3 to 8 grains = 0·2 to 0·52 grammes.

Under the name of **Ferrohæmol**, **Cuprohæmol** and **Zincohæmol**, compounds containing respectively Iron, Copper and Zinc with Hæmol have been introduced; **Bromo-hæmol** has been used in the treatment of epilepsy.

**HÆMOGALLOL.**—A dark brown or reddish-brown amorphous powder, slightly soluble in Water. Produced by the action of Pyrogallol on the colouring matter of the blood.

**Dose.**—1 to 5 grains = 0·06 to 0·32 grammes.

## HAMAMELIS.

### HAMAMELIS.

Both the dried Bark, and the fresh and dried Leaves of *Hamamelis Virginiana* are Official.

**Medicinal Properties.**—A local astringent and haemostatic. Has been used in various forms of passive haemorrhage, epistaxis, haemoptysis, hæmatemesis, menorrhagia, and bleeding piles, also for varicose veins.

**Prescribing Notes.**—*For local application, 1 of the Tincture is diluted with 10 or 20 of Water or the Liquor with 1 or 2 of Water. The ointment is used for piles, as is also a suppository of Hamamelin.*

*When equal Volumes of Tincture of Hamamelis and Tincture of Hydrastis are mixed, a precipitation will occur unless each Tincture be mixed with an equal Volume of Glycerin.*

**Official Preparations.**—Of the **Bark**, *Tinctura Hamamelidis*; of the **Dried Leaves**, *Extractum Hamamelidis Liquidum*; of the **Fresh Leaves**, *Liquor Hamamelidis*; of the **Liquid Extract**, *Unguentum Hamamelidis*.

**Not Official.**—*Extractum Hamamelidis, Gossypium Hama-melis, Suppositorium Hamamelidis, and Hamamelin.*

**HAMAMELIDIS CORTEX.**      HAMAMELIS  
BARK.    *B.P.Syn.*—WITCH HAZEL BARK.

The dried Bark of *Hamamelis Virginiana*.

Official in Fr. Supp. and U.S.

**TINCTURA HAMAMELIDIS.** TINCTURE OF HAMAMELIS.

2 of Hamamelis Bark, percolated with Alcohol (45 p.c.) to yield 20. (1 in 10)

**Dose.**—30 to 60 minims = 1·8 to 3·6 c.c.

Official in Fr. Supp., 1 in 5; a Tincture of the leaves of the same strength is also Official; both prepared with Alcohol (60 p.c.).

**Not Official.**

**EXTRACTUM HAMAMELIDIS.**—Hamamelis Bark in powder, percolated with Alcohol (60 p.c.) and the percolate evaporated to the consistence of an extract.

Yield of Extract, 20 to 25 p.c.

**Dose.**— $\frac{1}{2}$  to 2 grains = 0·032 to 0·13 grammes in pill.

$1\frac{1}{2}$  grains = 0·1 grammes, in suppositories; 1 dram. in 7 dram. of Soft Paraffin or other diluent, for an ointment.

**GOSSYPIUM HAMAMELIS.**—Tincture of Hamamelis  $\frac{1}{2}$  fl. oz., Glycerin 10 minims, Cotton Wool, in a thin sheet, 60 grains. Mix the Tincture and Glycerin, and saturate the wool evenly with the mixture. Dry by exposure to the air. Astringent and sedative.

**SUPPOSITORIUM HAMAMELIDIS.**—Extract of Hamamelis,  $1\frac{1}{2}$  grain; Oil of Theobroma, 15 grains.—*Samaritan*.

**HAMAMELIN.**—A powdered extractive prepared from either the Leaves or the Bark of *Hamamelis Virginiana*.

**Dose.**—1 to 5 grains = 0·065 to 0·32 grammes.

Two forms of Hamamelin are known in commerce, the green powder (non-hygroscopic) prepared from the Leaves, and a chocolate brown hygroscopic amorphous powder prepared from the Bark.

Hamamelin prepared from the Leaves with strong Alcohol was far more efficacious in suppositories than the resinoid from the Bark.—C.D. '98, i. 86; P.J. '01, ii. 231.

**HAMAMELIDIS FOLIA.** HAMAMELIS LEAVES.  
*B.P.Syn.*—WITCH HAZEL LEAVES.

The Leaves, fresh and dried, of *Hamamelis Virginiana*.

Official in Fr., Mex., Norw., Swed. and U.S.

**EXTRACTUM HAMAMELIDIS LIQUIDUM.** LIQUID EXTRACT OF HAMAMELIS.

20 of Hamamelin Leaves, percolated with Alcohol (45 p.c.) until exhausted, the first 17 reserved and the remainder

evaporated to an Extract, which is dissolved in the first portion, and made up with Alcohol (45 p.c.) to 20. (1 in 1)

**Dose.**—5 to 15 minims. = 0.3 to 0.9 c.c.

Official in Norw., Swed. and U.S.

**LIQUOR HAMAMELIDIS.** SOLUTION OF HAMAMELIS.  
EXT. HAMAMELIDIS DEST.

Fresh Hamamelis Leaves, 50; Water, 100; Alcohol (90 p.c.), 10. Macerate in a still for twenty-four hours; then distil one half.

It probably owes its virtues to the presence of a small quantity of essential Oil.

Pond's Extract and Hazeline are products distilled from Hamamelis.

**UNGUENTUM HAMAMELIDIS.** HAMAMELIS OINTMENT.

Liquid Extract of Hamamelis,  $\frac{1}{4}$ ; Hydrous Wool Fat,  $2\frac{1}{4}$ .  
(1 in 10)

Now made with Hydrous Wool Fat in place of Simple Ointment.

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Not Official.

**HELLEBORUS.**

CHRISTMAS ROSE.

The Rhizome and Rootlets of *Helleborus Niger*.

It contains the glucosides Helleborein and Helleborin.—J.C.S. Abs. '98, i. 39.

(It may be noted that 'White Hellebore' is Veratrum Album, and 'Green Hellebore' is Veratrum Viride.)

**Medicinal Properties.**—A hydragogue cathartic and emmenagogue. Poisonous in large doses.

Official in Belg., Dutch Supp., Fr., Mex., Port. and Span.

**TINCTURA HELLEBORI.**—Hellebore Root, 1; percolated with Alcohol (60 p.c.) to yield 8.

**Dose.**—20 to 60 minims = 1.2 to 3.6 c.c. in Water.

Official in Port. 1 in 5.

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**HEMIDESMI RADIX.**

HEMIDESMUS ROOT.

The dried Root of *Hemidesmus Indicus*.

Imported from India.

**Medicinal Properties.**—Alterative and tonic.

It was brought to England by Dr. Ashburner about the year 1830, and was prescribed for the same purposes as Sarsaparilla, but it did not prove very satisfactory, and is now used chiefly as a flavouring agent.

### **SYRUPUS HEMIDESMI. SYRUP OF HEMIDESMUS.**

Infuse 4 of Hemidesmus Root in 20 of boiling Distilled Water for four hours; strain, and after standing, decant the clear fluid, in which dissolve 28 of Refined Sugar with a gentle heat. It should weigh 42. (1 in 8)

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

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### **HIRUDO.**

#### **THE LEECH.**

1. *Sanguisuga medicinalis*, the Speckled Leech; and
2. *Sanguisuga officinalis*, the Green Leech.
3. *Hirudo quinquestriata*, the Five-Striped or Australian Leech is Official in the *Ind.* and *Col. Add.*, for the Australian Colonies.

Leeches are imported chiefly from Hamburg. They are also collected in large numbers in Spain, France, Italy, and Hungary.

Used for the abstraction of blood from congested parts; in pleurisy, typhlitis, pericarditis, and in cardiac distress.

When about to apply a leech, it should be handled as little as possible, and the part of the body should be clean, and free from grease or soap, and, if a hairy part, it should be first shaved. Several suggestions have been made, in case the leech should refuse to bite: to smear the part with Milk, Cream, or Sugar; to apply a sinapism and thoroughly clean the part afterwards; to scratch the part with a needle. When the leech is required to bite a particular spot, it is useful to cut a small hole in blotting paper, and place it on the part. When applying a leech to one of the orifices of the body, the leech should be confined in a leech glass.

Bleeding from leech bites is sometimes difficult to stop. The following remedies have been applied with advantage:—Matico, Solution of Ferric Chloride, Silver Nitrate Point, saturated Solution of Alum, and pressure on the part.

Official in Austr., Belg., Dan., Dutch, Fr. (*Sangsue Medicinale*), Ger., Hung., Ital., Jap., Port., Span., Swed. and Swiss.

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**HOMATROPINÆ HYDROBROMIDUM.**

HOMATROPINE HYDROBROMIDE.

HYDROBROMATE OF HOMATROPINE.—*B.P.* Add. '90.

Colourless, small, rhombic prisms, or a white crystalline powder. It is Tropine Mandelate which is a lower homologue of Atropine.

**Solubility.**—1 in 6 of Water; 1 in 18 of Alcohol (90 p.c.).

**Medicinal Properties.**—Mydriatic. Dilates the pupil as rapidly, though not so energetically as Atropine, but its effects disappear much sooner. When used with Cocaine the action is quicker and more powerful. The alkaloid is used in Castor Oil solution.

1 to 2 drops of a 1 p.c. solution in some cases of muscular asthenopia.—*B.M.J.* '99, ii. 765.

**Dose.**— $\frac{1}{80}$  to  $\frac{1}{20}$  grain = 0·0008 to 0·0032 grammes.

*Ph. Ger.* maximum single dose, 0·001 grammes; maximum daily dose, 0·003 grammes.

**Official Preparation.**—Lamellæ Homatropinæ.

**Not Official.**—Guttæ Homatropinæ, Guttæ Homatropinæ cum Cocaina, Lamellæ Homatropinæ cum Cocaina, Homatropina, Oleum Homatropinæ cum Cocaina.

**Official in Dan., Dutch, Fr., Ger., Ital., Swed. and Swiss.**

**LAMELLÆ HOMATROPINÆ. DISCS OF HOMATROPINE.**

Discs of Gelatin and Glycerin, each weighing about  $\frac{1}{50}$  grain = 0·0013 grammes; and containing  $\frac{1}{80}$  grain = 0·00065 grammes of Homatropine Hydrobromide.

**Not Official.**

**GUTTÆ HOMATROPINÆ.**—Homatropine Hydrobromide, 4 grains; Distilled Water, 1 fl. oz.—*London Ophthalmic*, and *Guy's*.

**GUTTÆ HOMATROPINÆ CUM COCAINA.**—Homatropine Hydrobromide, 4 grains; Cocaine Hydrochloride, 10 grains; Distilled Water, 1 fl. oz.—*London Ophthalmic*.

Homatropine Hydrobromide, 7 grains; Cocaine Hydrochloride, 10 grains; Boric Acid, 5 grains; Distilled Water, 1 fl. oz.—*Westminster Ophthalmic*.

**LAMELLÆ HOMATROPINÆ CUM COCAINA.**—Each disc contains  $\frac{1}{50}$  grain of Homatropine Hydrobromide, and  $\frac{1}{50}$  grain of Cocaine Hydrochloride.—*London Ophthalmic*.

**HOMATROPINA.**—Colourless crystals, not deliquescent, nearly insoluble in Water, but soluble 1 in 80 of Olive Oil, 1 in 20 of Castor Oil; they combine readily with Oleic Acid.

Used in cases where an oily preparation or an ointment is required.

**Official in Fr. and Mex.**

**Homatropine Hydrochloride and Salicylate** form colourless crystals or white crystalline powders. Both salts are readily soluble in Water, and in Alcohol (90 p.c.).

**OLEUM HOMATROPINÆ CUM COCAINA.**—Homatropine pure, 10 grains; Cocaine (alkaloid), 10 grains; Castor Oil, 1 fl. oz. Heat together till dissolved.—*London Ophthalmic.*

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### Not Official.

#### HORDEUM DECORTICATUM.

##### PEARL BARLEY.

The dried Seed of *Hordeum distichon*, divested of its integuments; from plants cultivated in Britain.

**Official in Belg., Fr. (Orge Perlé), Port. (Cevada Santa), Mex. and Span. (Cebada).**

**DECOCTUM HORDEI.**—Pearl Barley, 1; wash the Barley with cold Water, and reject the washings; boil the washed Barley with 15 of Distilled Water for twenty minutes in a covered vessel, and strain. Product about 10. (about 1 in 10)

**Official in Dutch, 8 in 100; Fr. (Tisane d'Orge), 1 in 50.**

**Medicinal Properties.**—Nutritive and demulcent, used in catarrhal conditions of the respiratory and urinary systems; as a drink in febrile diseases, and to dilute cow's Milk for feeding children, thus forming a more easily digested curd.

**Dose.**—1 to 4 fl. oz. = 28·4 to 113·6 c.c.

**DECOCTUM HORDEI TARTARIZATUM.**—Acid Potassium Tartrate, 80 grains; the Peel of  $\frac{1}{2}$  Lemon; Sugar, 2½ oz.; Decoction of Barley, 40 oz.; boil and strain.—*St. George's.*

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#### HYDRARGYRUM.

##### MERCURY.

##### Hg, eq. 198·80.

A metal obtained from native Mercuric Sulphide.

Sp. gr. 13·5. It becomes solid at  $-39^{\circ}$  F. ( $-39\cdot4^{\circ}$  C.) Boils at  $363^{\circ}$  C., but volatilises slightly even at the ordinary temperatures.

**Medicinal Properties.**—Mercury as a metal is seldom given alone. In a state of minute sub-division with Chalk, or in pill form, however, it has the effect of increasing the various secretions, and is itself absorbed by all the tissues of the body. It is an alterative, indirect cholagogue, purgative,

diuretic, and a glandular stimulant. When given as a purgative it is usually combined with other purgatives, or followed by a purgative saline.

Of great use, internally, in primary and secondary, and with iodides in tertiary, syphilis, but the doses should not be such as to cause salivation.

Externally, by means of the ointment, oleate or liniment, in syphilis, in parasitic skin diseases, and as a stimulant in chronic synovitis, peritonitis and other chronic inflammations, and glandular enlargements.

*See also* under the various salts of Mercury.

Two cases of acute intestinal obstruction successfully treated with Quicksilver.—*B.M.J.* '02, i. 1023.

Of the drugs frequently used in the treatment of syphilis, Blue Ointment is regarded as of most value.—*L.* '01, ii. 1038.

As an inunction ( $\frac{1}{2}$  to 1 dram. of the ointment well rubbed in at night before bedtime) it forms one of the most satisfactory ways of exhibiting Mercury.—*B.M.J.* '00, ii. 1762.

A mercurial cream prepared with a lanolin basis, and containing Carbolic Acid for use as an intramuscular injection in the treatment of syphilis.—*B.M.J.* '03, i. 1258.

**Official Preparations.**—Emplastrum Ammoniaci cum Hydrargyro, Emplastrum Hydrargyri, Hydrargyrum cum Creta, Liquor Hydrargyri Nitratis Acidus, Linimentum Hydrargyri, Pilula Hydrargyri, Unguentum Hydrargyri, Unguentum Hydrargyri Compositum, and Unguentum Hydrargyri Nitratis.

**Not Official.**—Mercury Plaster Mull, Mercury and Carbolic Plaster Mull, Oleum Cinereum, Suppositoria Hydrargyri, Unguentum Hydrargyri Mitius, Unguentum Cinereum, Hyrgolum, Hydrargyri Benzoas, Hydrargyrum Carbolicum, Hydrargyrol, Hermophenyl, Hydrargyri Cyanidum, Mercury Zinco-Cyanide, Unguentum Hydrargyri et Zinci Cyanidi, Hydrargyri Ethylenediamine Citras, Hydrargyri Gallas, Hydrargyri-Naphtholacetas, Hydrargyri Salicylas, Hydrargyri Succinimidum, Hydrargyri Sulphas, Unguentum Hydrargyri Sulphatis Flavæ, Hydrargyri Tannas, Hydrargyri Thymolacetas.

**Official in** all the Foreign Pharmacopœias.

### EMPLASTRUM HYDRARGYRI. MERCURIAL PLASTER.

3 oz. (by weight) of Mercury is rubbed with a heated mixture of 56 grains of Olive Oil, and 8 grains of Sublimed Sulphur; and finally incorporated with 6 oz. of melted Lead Plaster. (about 1 in 3)

**Official in** Austr., Dan., Ger., Hung., Ital., Norw., Russ. and Swiss, 1 in 5; Belg., 1 in 5·25; Dutch, 1 in 4; Fr., 1 in 5·6; Mex., 1 in 5·57; Span., 1 in 7·5; Swed., 1 in 3; U.S., 3 in 10. The ingredients differ considerably.

**EMPLASTRUM AMMONIACI CUM HYDRARGYRO.** AMMONIACUM AND MERCURY PLASTER.

3 oz. (by weight) of Mercury treated as above with Olive Oil and Sulphur and mixed with 12 oz. of purified Ammoniacum.  
(nearly 1 in 5)

Applied in glandular swellings, in chronic hepatic enlargement, syphilitic nodes, and in chronic synovitis.

Official in U.S., resembles Brit.

**LINIMENTUM HYDRARGYRI.** LINIMENT OF MERCURY.

Mix 1 oz. of Mercury Ointment with Liniment of Camphor to make 1½ fl. oz.; and add 160 minims of strong solution of Ammonia diluted with Liniment of Camphor to 1½ fl. oz.

(1 Ointment in 3, or 1 of Mercury in 6)

A stimulating Liniment, applied as an absorbent to swollen joints, or placed with Lint in the arm-pits, or rubbed into the abdominal wall in tubercular peritonitis.

**PILULA HYDRARGYRI.** MERCURY PILL. *B.P. Syn.*—BLUE PILL.

2 (by weight) of Mercury intimately mixed with 3 of Confection of Roses, and finally with 1 of powdered Liquorice Root.  
(1 in 3)

8 commercial samples examined contained 28 to 41 p.c. of Mercury, and little or no Oxide; 5 of the 8 samples were prepared with Confection of Hips.—*P.J.* (3) xv. 230.

**Dose.**—4 to 8 grains = 0·26 to 0·52 grammes.

Official in Belg., Dutch Supp., Fr., Jap., Mex., Port., Swed. and U.S.; all 1 in 3.

**UNGuentum HYDRARGYRI.** MERCURY OINTMENT.

Mercury (by weight), 16; Lard, 16; Prepared Suet, 1.

(nearly 1 in 2)

**Official Preparations.**—Used in the preparation of Linimentum Hydrargyri and Unguentum Hydrargyri Compositum.

Official in Belg., Fr., Mex. (*Unguento de Mercurio Doble*), Port. and U.S., 1 in 2; Fr. has also Pommade Mercurielle Faible, 1 in 8; Span. (*Pomada Mercurial Doble*), and Ital. (*Pomata Mercuriale*), 1 in 2; Span. (*P. M. Terciada*), 1 in 3, and (*P. M. Simple*), 1 in 6; Austr. Add., Ger., Hung., Russ., Swed. and Swiss (*Ung. Hydr. Ciner.*), 1 in 3; Dutch, 1 in 4; Dutch Supp., 1 in 2 (Fort.); Dan., Jap. and Norw., 1 in 5.

**UNGuentum HYDRARGYRI COMPOSITUM.** COMPOUND MERCURY OINTMENT.

Mercury Ointment, 10; Yellow Beeswax, 6; Olive Oil (by weight), 6; Camphor, in flowers, 3. Mix the Beeswax, Olive

Oil, and Mercury Ointment with the aid of heat, add the Camphor, triturate until cold. (1 Mercury in 5)

Contains rather less Mercury Ointment than B.P. '85, and the manipulation is modified, as previously suggested in the *Companion*.

This is Scott's celebrated absorbent Ointment (**Scott's dressing**), the Soap Cerate being replaced by the Oil and Beeswax.

It is an admirable Ointment to apply to chronic joint enlargements.

#### Not Official.

**MERCURY PLASTER MULL** (*Unna*).—Containing 1 grain = 0·06 grammie of Mercury to the square inch.

**MERCURY AND CARBOLIC PLASTER MULL** (*Unna*).—Containing 1 grain = 0·06 grammie of Mercury and  $\frac{3}{8}$  grain = 0·02 grammie of Carbolic Acid to the square inch.

**OLEUM CINEREUM** (Grey Oil).—White Vaseline, 2·5; Mercury Ointment, 1; Mercury, 19·5; triturate in a warm mortar until the Mercury is incorporated; then add White Vaseline, 7; Liquid Vaseline, 20. All by weight.

This preparation contains 40 p.c. of Mercury.—*P.J.* (3) xix. 704,

For hypodermic injection in syphilis. **Dose.**—1 to 2 minims. *B.M.J.* '88, i. 1296; *T.G.* '94, 319.

A modification of 'Grey Oil,' is Mercury, 1; Lanolin anhydrous, 2; Carbolic Oil (2 p.c.), 1; all by weight. 10 minims used for each injection.—*B.M.J.* '98, i. 485.

**SUPPOSITORIA HYDRARGYRI**.—Mercury Ointment, 5 grains; Oil of Theobroma, 10 grains, in each suppository.

**UNGUENTUM HYDRARGYRI MITIUS** (B.P.C.).—Mercurial Ointment 1, Lard 2.

**UNGUENTUM CINEREUM**.—Mercury and Lanolin, of each 1 oz.; best Olive Oil,  $\frac{1}{2}$  fl. oz.—*Lock*.

**HYRGOLUM** (Colloid Mercury).—Heavy black grains exhibiting a metallic lustre, containing 73 to 80 p.c. of Mercury; soluble in Water. On account of its freedom from causticity and non-irritating properties, it has been suggested as an anti-syphilitic remedy in the form of a 10 p.c. ointment, or internally in  $\frac{3}{4}$  grain dose in pill form.—*L.* '00, i. 1450; *B.M.J.* '01, i. 1551.

**HYDRARGYRI BENZOAS**.—A white crystalline salt, insoluble in Water, and in Alcohol (90 p.c.). Has been used for injection into buboes.—*B.M.J.* '90, i. 1087; *B.M.J.E.* '97, ii. 55; *L.* '91, ii. 505.

Six cases of general paralysis and tabes treated by hypodermic injection of 3 c.gm. Mercury Benzoate daily for 15 days alternated by a 15 days interval.—*B.M.J.E.* '02, ii. 87.

A suitable solution (*Desesquelle* and *Bretonneau*) for hypodermic injection in syphilis, Mercuric Benzoate, 0·3 grammie; Ammo-

nium Benzoate, 1·5 grammes; Sterilised Distilled Water, to 30 c.c.—*P.J.* '02, ii. 73.

**HYDRARGYRUM CARBOLICUM** (Mercury Carbolate, Mercury Phenate) (*Schadek*).—Colourless crystals, or a white powder. Obtained by precipitating an alcoholic solution of Mercuric Chloride with an Alcoholic solution of Phenol and Potassium Hydroxide, and evaporating nearly to dryness, with subsequent washings.

Nearly insoluble in Water, and soluble with difficulty in cold Alcohol.

**Medicinal Properties.**—Recommended in secondary syphilis.—*L.* '87, i. 943; *L.* '87, ii. 277; *P.J.* (3) xviii. 605.

**Dose.**— $\frac{1}{3}$  to  $\frac{1}{2}$  grain = 0·02 to 0·032 gramme, three times a day in pill; also hypodermically, suspended in Mucilage, strength 2 p.c.

**Pilula Hydrargyri Carbolici.**—Mercury Carbolate,  $\frac{1}{2}$  grain; Extract of Liquorice, 1 grain; Powdered Liquorice, 1 grain, in each pill.

**Dose.**—Two to four pills daily.

**Hydrargyrol** (Mercury Phenol-para-sulphonate).—Brownish-red crystalline scales or crusts. Decomposed by Water with the formation of basic salts. Insoluble in Alcohol (90 p.c.). Introduced as an antiseptic.

A combination of the above salt with Ammonium Tartrate is known under the name of 'Asterol,' a white or reddish-white micro-crystalline powder, soluble in Water. Introduced as an antiseptic, used in the form of 2 to 5 p.c. solution.—*B.M.J.E.* '01, ii. 64; *P.J.* '99, i. 538; '99, ii. 216; *C.D.* '01, ii. 872.

**Hermophenyl** (Sodium Mercuro-phenol Disulphonate).—A white amorphous powder, readily soluble in Water. It contains about 40 p.c. Mercury. Introduced as an antiseptic.—*P.J.* '01, ii. 245.

**HYDRARGYRI CYANIDUM.**—Colourless or white prismatic crystals.  $Hg(CN)_2$ , eq. 250·5. Not decomposed by Alkalies.

**Solubility.**—1 in 13 of Water; 1 in 20 of Alcohol (90 p.c.).

**Medicinal Properties.**—A powerful antiseptic. Used as a local application (5 to 15 grains in 1 fl. oz. of Water = 0·3 to 1 gramme in 28·4 c.c.) to syphilitic rashes and sores of the throat, tongue, etc.—*Ringer*.

Intravenous injection in syphilis.—*P.J.* '95, ii. 91.  $\frac{1}{2}$  p.c. solution as an antiseptic in ophthalmic practice.—*P.J.* '96, ii. 19.

Subconjunctival and intravenous injections, in the treatment of serous syphilitic disease of the eye.—*B.M.J.* '03, ii. 269.

**Dose.**—Internally  $\frac{1}{15}$  to  $\frac{1}{6}$  grain = 0·004 to 0·008 gramme.

*Ph. Ger.* maximum single dose, 0·02 gramme; maximum daily dose, 0·06 gramme.

**Official in Belg., Fr., Ger., Hung., Mex., Port., Russ., Span. and U.S.**

**Injectio Hydrargyri Cyanidi** (Intravenous).—Mercuric Cyanide, 1 p.c.; inject 20 minims.—*Lock.*

**Mercury Oxycyanide** as an antiseptic, in aqueous solution, 1 in 200.—*B.M.J.E.* '95, ii. 104; *T.G.* '96, 405.

**MERCURY ZINCO-CYANIDE**.—A product which has been found by Lord Lister to have valuable antiseptic properties.—*P.J.* (3) xx. 653; (3) xxii. 769.

There is also a **gauze** prepared with it.—*B.M.J.* '89, ii. 1025; *L.* '89, ii. 943.

Mercurialism resulting from use of the Cyanide gauze as a dressing.—*P.J.* '96, ii. 382.

**Unguentum Hydrargyri et Zinci Cyanidi**.—Mercury Zinc Cyanide, 2, 4 or 8 grains; Soft Paraffin, 1 oz.—*London Ophthalmic.*

**HYDRARGYRI ETHYLENEDIAMINE CITRAS** (Mercuramine).—A clear, colourless liquid, stated to be a 10 p.c. aqueous solution of Mercury Citrate containing 4 p.c. Ethylenediamine.

Introduced as an antiseptic.—*B.M.J.* '01, ii. 85; *P.J.* '01, ii. 142.

Under the title of **Sublamin** a combination of Mercury Sulphate and Ethylenediamine has been introduced. A 3 p.c. solution has been recommended as a disinfectant for the hands.—*B.M.J.E.* '02, i. 56.

**HYDRARGYRI GALLAS** (Mercury Gallate).—A dark grey or greyish-green amorphous powder, insoluble in Water. Is stated to be a more stable salt than the tannate. Used in syphilis.

**Dose.**— $\frac{1}{2}$  to 1 grain = 0·016 to 0·06 grammes, in a pill.

**HYDRARGYRI-NAPHTHOLACETAS**.—Colourless, needle-shaped crystals, or as a white amorphous powder, insoluble in Water, has been used in treatment of syphilis.

**Dose.**— $\frac{1}{2}$  to 1 grain = 0·032 to 0·06 grammes.

**HYDRARGYRI SALICYLAS**.—A white or whitish amorphous odourless powder; practically insoluble in Water, and in Alcohol (90 p.c.).

Employed internally and by hypodermic injection, also as a dusting powder, in the treatment of syphilis. Is stated to be as powerful an antiseptic as corrosive sublimate.

Intramuscular injection of Mercury Salicylate, 5; Liquid Paraffin, 50; one Pravaz syringeful, in the treatment of syphilis.—*B.M.J.* '99, i. 122.

Maximum single dose, 0·02 grammes; maximum daily dose, 0·06 grammes.

In the treatment of 12,000 cases of skin and venereal disease, intramuscular injections of 1 c.c. of the following emulsion. Mercury Salicylate, 1; Liquid Paraffin, 10. Injections being made once a week and not more than six injections being given, followed by an interval of rest of some duration (about a couple of months).—*B.M.J.E.* '04, i. 609, 816.

Official in Ger., Russ. and Swed.

**HYDRARGYRI SUCCINIMIDUM.**—White crystalline powder, soluble in Water. Its solutions are stated not to precipitate albumen, and are therefore useful for hypodermic use. Used as a solution of Mercury Succinimide, 38 $\frac{3}{4}$  grains; Cocaine Hydrochloride, 15 $\frac{1}{2}$  grains; Distilled Water, 775 grains.—*L.* '02, i. 1712.

The use of Cocaine Nitrate in place of the Hydrochloride would avoid the precipitation of Calomel.

Dose.— $\frac{1}{8}$  to  $\frac{1}{4}$  grain = 0.008 to 0.016 grammes.

**Official in Ital.**

**HYDRARGYRI SULPHAS** (Mercuric Sulphate). *Syn.*—**HYDRARGYRI PERSULPHAS**; **SULPHATE OF MERCURY**.

A white, heavy, crystalline powder,  $HgSO_4$ , eq. 294.14; prepared by dissolving Mercury in strong Sulphuric Acid and evaporating to complete dryness. It is decomposed by Water, forming a yellow oxysulphate called Turpeth Mineral ( $HgSO_4 \cdot 2HgO$ ), and free Sulphuric Acid.

It is used for small medical batteries.

**Official in** Dutch Supp., Sulfas Hydrargyricus; Fr., Sulfate Mercurique; Mex., Port. and Span., Sulfato Mercurico. Belg., Subsulphas Hydrargyri; Swiss, Hydrargyrum Sulfuricum basicum; U.S., Hydrargyri Subsulphas Flavus; these three are the yellow 'Turpeth Mineral.'

**Unguentum Hydrargyri Sulphatis Flavæ** (Turpeth Mineral Ointment. Bazin's Ointment).—Yellow Mercury Sulphate, 15 grains; Benzoated Lard, 1 oz.—*British Skin.*

Useful in ringworm and seborrhœa capitis.

**HYDRARGYRI TANNAS.**—A greyish-green or blackish-grey powder, containing 40 to 50 p.c. of Mercury.

It is decomposed by Water and solutions of the Alkalies. It is not materially affected by Diluted Hydrochloric Acid.

**Medicinal Properties.**—Has been found very useful in syphilis.

It is decomposed by the alkali of the intestines, and the Mercury rapidly passes into the system.—*L.* '84, i. 723; *M.T.* '85, ii. 869.

Dose.—1 to 2 grains = 0.06 to 0.13 grammes, in a pill, three times a day, an hour before meals.

*Dutch Supp.* maximum single dose, 0.1 grammes; maximum daily dose, 0.3 grammes.

**Official in Austr.**, contains about 42 p.c. of Mercury; Dutch Supp.; Mex. (Tanato de Mercurio).

**HYDRARGYRI THYMOLACETAS.**—A white micro-crystalline powder, almost insoluble in Water. Has been used in the treatment of syphilis internally, or as an intramuscular injection (10 p.c. in liquid paraffin or vaseline oil).

Dose.— $\frac{1}{2}$  to 1 grain = 0.032 to 0.06 grammes.

**HYDRARGYRI IODIDUM RUBRUM.**

MERCURIC IODIDE.

B.P. *Syn.*—BINIODIDE OF MERCURY. $\text{HgI}_2$ , eq. 450·60.

In scarlet-red crystals, or crystalline powder.

**Solubility.**—Almost insoluble in Water; sparingly soluble in Glycerin; 1 in 300 of Alcohol (90 p.c.); 1 in 70 of Ether; 1 in 280 of Olive or Almond Oil or Lard; 1 in 50 of Castor Oil; insoluble in Paraffinum Molle; freely in an aqueous solution of Potassium Iodide or Mercuric Chloride.

**Medicinal Properties.**—Alterative and deobstruent. A powerful irritant poison in over-doses, similar to the Green Iodide, only much more active. It is used internally in the same cases as Corrosive Sublimate, more particularly in chronic glandular enlargements and rheumatism and cutaneous diseases when due to syphilis. As an antiseptic lotion (1 in 5000) in surgical and obstetric practice.

The Ointment is a most effective application for bronchocele, and a good application for warts and syphilitic nodes and for lupus. If applied to the eyelids, should be diluted to  $\frac{1}{4}$  the strength.

In infantile diarrhoea.—*Pr. lv.* 208; *P.J.* '95, ii. 215.**Dose.**— $\frac{1}{32}$  to  $\frac{1}{16}$  grain = 0·002 to 0·004 gramme.

Ph. Ger. maximum single dose, 0·02 gramme; maximum daily dose, 0·06 gramme.

**Prescribing Notes.**—Usually given in the form of Pilules well triturated with Milk Sugar and ‘Diluted Glucose.’ When prescribed in Solution it is dissolved by the aid of Potassium Iodide. It can also be dissolved in Castor Oil and given in Capsules.

**Official Preparation.**—Unguentum Hydrargyri Iodidi Rubri. Used in the preparation of Liquor Arsenii et Hydrargyri Iodidi.

**Not Official.**—Hydrargyri et Potassii Iodidum, Injectio Hydrargyri Biniodidi and Unguentum Hydrargyri et Potassii Iodidi.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Port., Russ., Span., Swed., Swiss and U.S.**

**UNGUENTUM HYDRARGYRI IODIDI RUBRI.**

MERCURIC IODIDE OINTMENT. B.P. *Syn.*—OINTMENT OF RED IODIDE OF MERCURY.

Mix 1 of Mercuric Iodide, in fine powder, with 24 of Benzoated Lard. (1 in 25)

Official in Mex., 1 in 50.

## Not Official.

**HYDRARGYRI ET POTASSII IODIDUM.**—Yellow acicular crystals. It is a powerful antiseptic.

**INJECTIO HYDRARGYRI BINIODIDI** (pro Vagina).—Mercuric Chloride 8 grains, Potassium Iodide 5 grains, Water to 1 fl. oz. 1 fl. dram. to a pint of Water.—*Lock.* (1 in 10,000)

**UNGENTUM HYDRARGYRI ET POTASSII IODIDI** (Lütz's Ointment).—Red Mercuric Iodide, 5 grains; Potassium Iodide 5 grains; Water, *q.s.*; Prepared Lard, 1 oz.—*British Skin.*

*University* has a similar preparation containing Wool Fat.

## Not Official.

**HYDRARGYRI IODIDUM VIRIDE.**

**GREEN IODIDE OF MERCURY.** GREEN MERCUROUS IODIDE.

**HgI**, eq. 324·70.

A dull green powder containing excess of Mercury, which decomposes upon exposure to light.

**Solubility.**—Insoluble in Water, Alcohol, and Ether.

**Medicinal Properties.**—Given in syphilis and in strumous and rheumatic affections. Employed as an ointment (1 part to 8 of Lard) for scrofulous and syphilitic eruptions, chronic skin diseases, enlarged glands, and bronchocele.

**Dose.**—It varies with different prescribers from  $\frac{1}{8}$  grain to 2 grains = 0·01 to 0·13 grammes.

*Ital.* maximum single dose, 0·05 gramme; maximum daily dose, 0·20 gramme.

$\frac{1}{4}$  or  $\frac{1}{5}$  grain three times daily, increasing the dose slowly until constitutional effects are produced.—*L.* '01, ii. 1038.

**Prescribing Notes.**—*It makes a good pill with Sugar of Milk and 'Diluted Glucose.'*

**Incompatible** with soluble Iodides.—*C.D.* '92, ii. 275.

**Official** in Austr., Belg., Dutch, Fr., Hung.; Ital., Mex., Port., Span., Swed., Swiss and U.S.

**PILULA HYDRARGYRI IODIDI VIRIDIS.**—Green Mercurous Iodide,  $\frac{1}{2}$  grain; Opium,  $\frac{1}{4}$  grain; Extract of Gentian, 2 grains.—*British Skin.*

**UNGENTUM HYDRARGYRI IODIDI VIRIDIS CUM ATROPINA.**—Green Mercurous Iodide, 10 grains; Atropine, 1 grain; Lard,  $\frac{1}{2}$  oz.

**HYDRARGYRI NITRATIS LIQUOR ACIDUS.**

ACID SOLUTION OF MERCURIC NITRATE.

A heavy, colourless, strongly acid solution, sp. gr. about 2·0, containing about 33 p.c. of Mercury in the form of Mercuric

Nitrate. It is obtained by dissolving, in the cold, 4 (by weight) of Mercury in 5 of Nitric Acid diluted with  $1\frac{1}{2}$  of Water. It should be preserved in well stoppered amber-tinted bottles.

**Medicinal Properties.**—Caustic and antiseptic. Applied to syphilitic warts, ulcers, etc.; care should be taken that the surrounding healthy parts are not touched. Used in cancerous growths and in lupus. As a gargle, 1 or 2 minimis to 1 fl. oz. Water. As an injection in gonorrhœa, 1 minim to 2 fl. oz. water.

**Official Preparations.**—Unguentum Hydrargyri Nitratis and Unguentum Hydrargyri Nitratis Dilutum contain Mercuric Nitrate.

**Official** in Belg., Fr., Ital., Mex., Port., Span. and U.S., sp. gr. 2·100.

**UNGUENTUM HYDRARGYRI NITRATIS.** MERCURIC NITRATE OINTMENT. *B.P. Syn.*—OINTMENT OF NITRATE OF MERCURY. *N.O. Syn.*—CITRINE OINTMENT.

Mercury (by weight), 1; Nitric Acid, 3; Lard, 4; Olive Oil (by weight), 7. Dissolve the Mercury in the Nitric Acid without the aid of heat, agitating gently from time to time. Heat the Lard and Olive Oil together on a sand-bath, so that the mixture when transferred to a heated earthenware jar, capable of holding ten times the quantity, shall be at a temperature of about 290° F. (143·3° C.). Add the cold Mercurial Solution very gradually, stirring constantly to promote disengagement of the fumes. After frothing has ceased, the mixture, which should have a temperature of not less than 200° F. (93·3° C.), must be kept stirred until it is cold. The resulting Ointment should be firm in consistence and have a pale lemon colour.

(about 1 in 16 $\frac{1}{4}$ )

The Official directions given above do not work satisfactorily, the temperature is much too high and yields varying results with different operators, and even by the same operator at different times. The following method will yield a more uniform product.

Dissolve, without the aid of heat, the Mercury in the Nitric Acid. Heat the Lard and Oil on a water-bath, until the Lard is dissolved, and when at a temperature of 180° to 190° F. add the Mercuric Solution (cold) to the melted fats and stir continuously. When brisk effervescence has commenced continue the heat for ten minutes, then remove from the water-bath and stir till cold.

Specimens made by this process, in 1898, were exhibited at an Evening Meeting in 1902, and were in good condition.—*P.J. '02, i. 314.*

**Medicinal Properties.**—Applied in chronic diseases of the skin as a stimulant and alterative; in tinea tarsi it is

diluted with 7 parts of Vaseline and applied by means of a camel's-hair pencil to the eyelids. Diluted with Glycerin and applied by a brush to the nostrils in ozena.

This Ointment, when diluted with Lard, soon acquires a leaden colour; it changes less with Spermaceti Ointment, and least of all when diluted with Soft Paraffin.

**Incompatibles.**—All reducing agents, Camphor, Essential Oils, Lard, etc.

**Official Preparation.**—*Unguentum Hydrargyri Nitratis Dilutum.*

**Official in Belg.**, Mercury 2, Nitric Acid (sp. gr. 1·33) 3, Lard 12, Olive Oil 12; Dutch Supp., Mercuric Oxide 11, equal parts Nitric Acid and Water 25, Lard 180; Fr., Mercury 1, Nitric Acid (sp. gr. 1·39) 2, Lard 10, Olive Oil 10; Mex., Mercury 4, Nitric Acid 6, Lard 64; Port., Sol. Mercuric Nitrate 2, Lard 9, Olive Oil 9; Span., Mercury 2, Nitric Acid (sp. gr. 1·32) 3, Lard 16, Olive Oil 16; Swed., Mercury 1, Nitric Acid (sp. gr. 1·5) 2, Lard 12; U.S., Mercury 7, Nitric Acid (sp. gr. 1·414) 17·5, Lard Oil 76.

**UNGUENTUM HYDRARGYRI NITRATIS DILUTUM.** DILUTED MERCURIC NITRATE OINTMENT. *B.P. Syn.*—DILUTED OINTMENT OF NITRATE OF MERCURY.

Mix 1 of Mercuric Nitrate Ointment, with 4 of yellow Soft Paraffin. (1 in 5)

It is more dilute than B.P. '85.

#### Not Official.

**UNGUENTUM METALLORUM.**—Mercuric Nitrate Ointment, Lead Acetate Ointment, Zinc Ointment, equal parts.—*King's and Great Northern.*

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## HYDRARGYRI OLEAS.

### MERCURIC OLEATE.

A brownish-yellow semi-solid oleaginous mass when fresh, but becoming of a stiffer consistence and darker colour on keeping. It is the precipitate obtained on mixing solution of Mercuric Chloride and Hard Soap.

Now made by precipitation instead of treating Mercuric Oxide with Oleic Acid.

An Oleate containing 20 p.c. is readily made as follows:—Mercuric Oxide (finely powdered), 4; Oleic Acid (by weight), 16; Ether (0·720), 1. Mix the Oxide of Mercury with the Ether and stir in rapidly the whole of the Oleic Acid, warm to 120° F., stirring frequently till the Oxide is dissolved. The operation should be complete in 1 to 2 hours.

Mercuric Oleate was introduced by Prof. Marshall in 1872, and was made of three different strengths, containing respectively 5 p.c., 10 p.c., and 20 p.c. of Mercuric Oxide.

The 5 p.c. very quickly changed to a black colour owing to reduction of the Mercuric Oxide; the 10 p.c. kept better but not very long without change. It is better to keep the 20 p.c. and dilute it when required for use.

**Medicinal Properties.**—Similar to those of Mercury Ointment and Liniment, but more easily absorbed. Used with great success in tubercular peritonitis. Has been strongly recommended as an application for persistent inflammation in the joints or other parts near the surface, more particularly when combined with Morphine. It is useful, spread on lint and placed in the axilla, for syphilis; also as an application for non-ulcerated syphilitic indurations. A good application for killing pediculi.

**Official Preparation.**—Unguentum Hydrargyri Oleatis.

**Not Official.**—Hydrargyri Oleas c. Morphina.

**Official in Mex. and U.S.**

#### **UNGUENTUM HYDRARGYRI OLEATIS.** Mercuric Oleate Ointment.

Mercuric Oleate, 1; Benzoated Lard, 3.

**Not Official.**

**HYDRARGYRI OLEAS C. MORPHINA** is made by dissolving 1 grain = 0·06 gramme of Morphine Alkaloid in each drm. = 3 grammes of Mercuric Oleate (10 p.c.).

#### **HYDRARGYRI OXIDUM FLAVUM.**

**YELLOW MERCURIC OXIDE.**

**HgO**, eq. 214·68.

An orange-yellow heavy amorphous powder, being the precipitate obtained from solutions of Mercuric Chloride and Sodium Hydroxide. It is important that it should be protected from light.

**Solubility.**—Practically insoluble in Water or Alcohol (90 p.c.). Asparagin dissolves the freshly precipitated Oxide (see p. 71) to form **Mercury-Asparagin**.

**Medicinal Properties.**—Similar to the Red Mercuric Oxide.

*Ph.Ger.* maximum single dose, 0·02 gramme; maximum daily dose, 0·06 gramme

**Official Preparation.**—Unguentum Hydrargyri Oxidi Flavi.

**Official** in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Russ., Span., Swed., Swiss and U.S.

**UNGUENTUM HYDRARGYRI OXIDI FLAVI.**  
YELLOW MERCURIC OXIDE OINTMENT.

Yellow Mercuric Oxide, in very fine powder, 10 grains; Yellow Soft Paraffin, 490 grains. (1 in 50)

**Medicinal Properties.**—Used in cases of chronic eczema, pityriasis, ringworm, chronic lichen, and syphilitic eruptions.

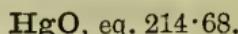
Diluted with an equal or twice the quantity of Vaseline, is a most valuable remedy for ophthalmia tarsi, corneal ulceration, and all forms of conjunctival inflammation.

Several formulas are given in the Pharmacopœias of the London Hospitals containing from 2 to 60 grains to the oz.

**Official** in Dutch, Yellow Oxide 1, White Vaseline 19; Fr. (Pommade avec l'Oxyde Jaune de Mercure) and Mex. (Pomada de Oxido Amarillo de Mercurio), Yellow Oxide 1, Vaseline 15; Ital. (Pomata di ossido giallo di mercurio), Yellow Oxide 1, Vaseline, 16 $\frac{2}{3}$ ; Jap., Yellow Oxide 1, Vaseline 9; Russ., Yellow Oxide 1, Lard 49; U.S., Yellow Oxide 10, Lard 72, Yellow Wax 18.

**HYDRARGYRI OXIDUM RUBRUM.**

RED MERCURIC OXIDE.



Orange-red crystalline scales, or heavy crystalline powder, prepared by heating Mercurous Nitrate.

**Solubility.**—Insoluble in Water and Alcohol 90 p.c.; readily soluble in Hydrochloric Acid.

**Medicinal Properties.**—A powerful irritant, rarely used internally. Employed, either in powder or ointment, as an escharotic to indolent ulcers and fungoid growths.

*Ph. Ger.* maximum single dose, 0·02 gramme; maximum daily dose, 0·06 gramme.

**Official Preparation.**—Unguentum Hydrargyri Oxidi Rubri.

**Official** in Belg., Dan., Dutch, Fr., Ger., Ital., Jap., Mex., Norw., Port., Russ., Span., Swiss and U.S.

**UNGUENTUM HYDRARGYRI OXIDI RUBRI.**  
RED MERCURIC OXIDE OINTMENT. *B.P.Syn.*—RED PRECIPITATE OINTMENT.

Red Mercuric Oxide, in very fine powder,  $\frac{1}{4}$ ; Yellow Paraffin Ointment, 2 $\frac{1}{4}$ . (1 in 10)

Now 1 in 10 instead of 1 in 8, and made with Yellow Paraffin Ointment in place of Hard and Soft Paraffin.

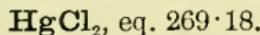
**Medicinal Properties.**—Caustic for chronic ulcers and unhealthy granulations and soft warts. Much diluted, is used for ulcerations of the cornea and chronic ophthalmia, but the Ointment of the Yellow Oxide is preferred by many.

Official in Belg., 1 in 50; Dan., Dutch, Norw., Port. and Swiss, 1 in 20; Fr., Mex. and Span., 1 in 16; Ger. and Ital., 1 in 16 $\frac{2}{3}$ ; Jap. and U.S., 1 in 10; Russ., with Yellow Oxide (p. 342).

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## HYDRARGYRI PERCHLORIDUM.

MERCURIC CHLORIDE.



*B.P. Syn.*—BICHLORIDE OF MERCURY; CORROSIVE SUBLIMATE; PERCHLORIDE OF MERCURY.

*N.O. Syn.*—Chloretum Hydrargyricum, Hydrargyrum Bichlora-tum, Sublimatus Corrosivus.

Heavy, colourless, rhombic crystals, or in crystalline masses, or a heavy white crystalline powder.

**Solubility.**—1 in 19 of Water; 1 in 5 of Alcohol (90 p.c.); 1 in 3 of Absolute Alcohol; 1 in 6 of Ether, *B.P.* (0·735); 1 in 11 of Purified Ether (0·720); 8 in 13 of Glycerin.

**Medicinal Properties.**—A powerful antiseptic and very poisonous; disinfectant, escharotic, alterative; given in very small doses in syphilitic affections, and in syphilitic and non-syphilitic skin diseases. Externally as a lotion, 1 grain to the fluid ounce, or ointment, 2 to 8 grains in the ounce, in chronic and parasitic skin diseases, and in acne and freckles; 1 in 1000 is used for syphilitic ulcers; as an ordinary surgical dressing and in obstetric practice 1 in 2000 to 5000 is sufficient; as an injection, 1 grain to 8 fl. oz., for chronic discharges, such as leucorrhœa and gonorrhœa; and as a gargle, 1 grain in 4 fl. oz., for ulcerated and syphilitic sore throat; as a collyrium, 1 grain in 8 fl. oz. For syphilis by hypodermic injection,  $\frac{1}{30}$  to  $\frac{1}{10}$  grain (with Sodium Chloride), in divided portions in the course of the day. As a local application in diphtheria.

An aqueous solution of 1 in 1000 is employed for disinfecting the hands, towels, sponges, etc., in operative surgery; it corrodes surgical instruments. A solution of the same strength is used for washing infected rooms, furniture and other articles, and for soaking infected linen. The solution is often coloured with aniline blue or methyl violet to guard against its being mistaken for water or other harmless fluid.

The disadvantages of Mercuric Chloride as a disinfectant

and antiseptic are due (1) to its forming with albumen an inert and insoluble compound, (2) to its corrosive action on metals, and (3) to its being a powerful poison.

To prevent its antiseptic value being destroyed by the formation of an albuminate, five parts of Tartaric or Hydrochloric Acid should be added to each part of Mercuric Chloride.

In France it is legal to supply registered nurses (for obstetric purposes) with a lotion containing 0·025 gramme Mercuric Chloride and 1 gramme Tartaric Acid per litre, also an ointment containing 1 p.c. in Vaseline.—*A.J.P.* '90, 180.

As a disinfectant of enteric or other infectious stools and urine, an equal quantity of a 1 in 500 acidulated solution should be used. They should be thoroughly mixed and left in contact for at least two hours before they are finally disposed of.

Recommended for dysentery in India,  $\frac{1}{15}$  grain every 4 hours.—*L.* '89, ii. 901.

Injection of Corrosive Sublimate solution in hydrocele.—*L.* '97, ii. 594; in tetanus.—*B.M.J.* '97, i. 138; in lupus.—*B.M.J.E.* '96, i. 52; and in other forms of tuberculosis.—*B.M.J.E.* '96, i. 71.

A handy and trustworthy preparation for use as hypodermic injection in syphilis is:—Mercury Perchloride, 1 grain; Glycerin, 1 fl. dram.; Distilled Water, 1 fl. dram. A stable preparation which can be kept for several days or weeks. 10 minims of the solution =  $\frac{1}{2}$  grain Mercuric Chloride.—*L.* '01, ii. 1038.

Mercuric Chloride and Sodium Chloride of each, 1·2 grammes; in 189 c.c. Water. 2 c.c. injected daily for two weeks, a day's interval after six injections (*Hillier*).—*M.A.* '02, 42. Great objection to the intramuscular injection of Perchloride is the pain caused by it, which is often considerable.—*L.* '01, ii. 522.

$\frac{1}{2}$  grain three times a day in the treatment of lichen planus.—*B.M.J.E.* '01, ii. 64.

Mercurial salts are the most efficient antiseptic agents we possess in surgical practice, and it may be argued that the therapeutic action of Mercury when administered internally is to be accounted for to a great extent by its antiseptic property. Mercuric Chloride is most valuable as a bactericide in the treatment of scarlet fever.—*B.M.J.* '03, ii. 231.

With regard to fluid disinfectants, a 1 in 1000 solution of corrosive sublimate with twenty-four hours' exposure, destroyed all microbes, including the spores of anthrax, and the tubercle bacilli. Anthrax spores were only destroyed with certainty by Mercuric Chloride. Report on the practical experiments on disinfection undertaken for the London County Council.—*L.* '02, i. 758; *B.M.J.* '02, i. 792.

$\frac{1}{2}$  grain dissolved in  $2\frac{1}{2}$  oz. of Water, injected into the pleural cavity, after tapping, in a case of empyema.—*B.M.J.* '03, i. 78.

Experiments in intravascular antisepsis. That Mercury Perchloride, Mercury Oxycyanide and Protargol cannot be injected

intravenously into rabbits in sufficient strength to produce an antiseptic effect lasting several days.—*L.* '03, i. 99.

**Dose.**— $\frac{1}{32}$  to  $\frac{1}{16}$  grain = 0·002 to 0·004 grammes.

*Ph. Ger.* maximum single dose, 0·02 grammes; maximum daily dose, 0·06 grammes.

**Prescribing Notes.**—Generally prescribed in the form of the Liquor or given in pills well triturated with Milk Sugar and massed with 'Diluted Glucose.'

**Compressed Discs** are prepared for making an antiseptic solution, 1 in 1000, see *Not Official*.

**Incompatibles.**—Alkalies and their Carbonates, Lime Water, Tartar Emetic, Silver Nitrate, Lead Acetate, Albumen, Soaps, Decoction of Cinchona, Tannin, Alkaline Sulphides. Potassium Iodide converts it into Mercuric Iodide, soluble in excess.

**Official Preparations.**—Liquor Hydrargyri Perchloridi, and Lotio Hydrargyri Flava. Used in the preparation of Hydrargyri Oleas, Hydrargyri Oxidum Flavum, and Hydrargyrum Ammoniatum.

**Not Official.**—Corrosive Sublimate Discs, Sublimate Wood Wool, Sublimate Gauze, Injectio Hydrargyri Hypodermica, Preservative Solution, Sal Alembroth, Injectio Sal Alembroth Hypodermica.

**Antidotes.**—In case of poisoning by Corrosive Sublimate, raw eggs should be administered in large quantity; flour with milk may also be given; the stomach should then be washed out or an emetic employed.

**Official** in all the Foreign Pharmacopœias. Austr. and Hung., Hydrargyrum Bichloratum Corrosivum; Belg., Sublimatus Corrosivus; Dau., Norw. and Swed., Chloretum Hydrargyricum Corrosivum; Dutch, Chloretum Hydrargyricum; Fr., Chlorure Mercurique; Ger., Jap., Russ. and Swiss, Hydrargyrum Bichloratum; Ital., Bichloruro di Mercurio; Port., Chloreto Mercurico; Mex. and Span., Cloruro Mercurico; U.S., Hydrargyri Chloridum Corrosivum.

### LIQUOR HYDRARGYRI PERCHLORIDI. SOLUTION OF MERCURIC CHLORIDE.

1 grain of Mercuric Chloride, dissolved in 2 fl. oz. of Distilled Water. (1 in 875)

Contains  $\frac{1}{16}$  grain in 1 fl. dram. Ammonium Chloride now omitted.

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

*Ital.* maximum single dose, 20 grammes; maximum daily dose, 100 grammes.

**Official** in Belg., Liquor Sublimati Corrosivi (Van Swieten); Fr., Soluté de Bichlorure de Mercure; Ital., Soluzione Idroalcoolica di Bichloruro di Mercurio; Port., Soluto de Chloreto Mercurico; Swiss, Hydrargyrum Bichloratum Solutum: all 1 in

1000; Mex., Solucion de Van Swieten, 1 in 1000, containing 10 p.c. of Alcohol (80°); Span., Solucion Hidro-Alcoholica de Cloruro Mercurico, 1 in 1200.

**LOTIO HYDRARGYRI FLAVA.** YELLOW MERCURIAL LOTION. *B.P.Syn.*—YELLOW WASH.

Mercuric Chloride, 20 grains; Solution of Lime, 10 fl. oz.  
(1 in 219)

Now 2 grains to the fluid ounce.

This lotion owes its efficacy to the precipitated Mercuric Oxide, and is used for the same purposes as Mercuric Oxide Ointment.

Official in Belg. and Dutch (Aq. Phagedænica), 1 in 250; Fr. (Eau Phagédénique), 1 in 300; Mex. (Agua Fagédenica Roja), 1 in 600; Span. (Agua Fagédenica), 1 in 350.

**Not Official.**

**CORROSIVE SUBLIMATE DISCS.**—Compressed discs containing 8½ grains of Mercuric Chloride, with an equal weight of Sodium Chloride, and coloured with Methyl Violet.

One disc dissolved in a pint of Water forms a solution containing 1 of Mercuric Chloride in 1000.

One pint of London Water with 10 grains of Mercuric Chloride makes a clear solution, also with the addition of 10 grains of Sodium Chloride; but with 10 grains of Ammonium Chloride it is very turbid. The latter, therefore, should not be used in making the discs.

Official in Austr. Add., Ger., Ital. and Swed., 1 and 2 grammes, red; Dutch Supp., 2 grammes, red and blue. All made with a mixture of equal parts of Mercuric and Sodium Chlorides.

**SUBLIMATE WOOD WOOL.**—Pinewood almost in a state of powder, containing ½ p.c. of Corrosive Sublimate. It is highly absorbent.

**SUBLIMATE WOOL** (*Ital.*).—Absorbent Wool containing 1 of Mercuric Chloride in 400.

**SUBLIMATE GAUZE** (*Fr. Supp.*).—Prepared Gauze containing  $\frac{1}{1000}$  of its weight of corrosive sublimate. *Dutch Supp.* contains 1 in 400.

**INJECTIO HYDRARGYRI HYPODERMICA.**—Mercuric Chloride, ½ grain; Sodium Chloride, pure, 5 grains; Water to 1 drachm.

**Dose.**—4 to 12 minims =  $\frac{1}{30}$  to  $\frac{1}{10}$  grain in divided portions in the course of one day.

**PRESERVATIVE SOLUTION** (for Anatomical subjects).—Corrosive Sublimate, 180 grains; Glycerin, 21 fl. oz.; Methylated Spirit, q.s. to make 80 fl. oz. For injection into the femoral artery.

**SAL ALEMBROTH.**—Mercuric Ammonium Chloride,  $2\text{NH}_4\text{Cl}\cdot\text{HgCl}_2\cdot\text{H}_2\text{O}$ ; when exposed to dry air the water is given off.

**Solubility.**—2 in 1 of Water, 1 in  $3\frac{1}{2}$  of Alcohol (90 p.c.), 1 in 1 of Glycerin.

**Medicinal Properties.**—A powerful antiseptic, but it is not so irritating as Corrosive Sublimate. Used in the antiseptic treatment of wounds.

For **Hypodermic** injection in syphilis,  $\frac{1}{3}$  grain dissolved in 10 minims of Water.—*B.M.J.* '88, i. 905.

Alembroth **Gauze**, 1 p.c.; **Wool**, 2 p.c.; they are tinted with aniline blue, and as the colour is bleached by purulent discharge, soakage of the dressing is readily noted.

**Injectio Sal Alembroth Hypodermica.**—Mercuric Chloride 32 grains, Ammonium Chloride 16 grains, Distilled Water 2 fl. oz.—*Lock.*

**Dose.**—10 minims =  $\frac{1}{3}$  grain of Sal Alembroth to be used for an injection.

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## HYDRARGYRI SUBCHLORIDUM.

MERCURIOUS CHLORIDE.

*B.P.* *Syn.*—CALOMEL; HYDRARGYRI CHLORIDUM. SUBCHLORIDE OF MERCURY.

$\text{Hg}_2\text{Cl}_2$ , eq. 467·98.

A heavy, white, or whitish, odourless, tasteless, impalpable powder, which should be protected from the light.

**Solubility.**—Insoluble in Water, Alcohol (90 p.c.), or Ether.

**Medicinal Properties.**—Alterative, indirect chalagogue, purgative, antiseptic, and diuretic.

As an alterative it is used in syphilitic affections, chronic skin diseases, and glandular enlargements.

Useful in chronic hepatitis, catarrhal jaundice, and in chronic pharyngitis; repeated small doses of great benefit in obstinate vomiting; also, in the gastro-intestinal catarrh and diarrhoea of children, for whom the absence of taste renders it convenient.

As a purgative in biliousness, hepatic and cardiac dropsy, apoplexy, gout, and in congested and torpid liver due to free living.

In enteric fever, the stupor, tremor, headache and coma, all of which may be due to intestinal sepsis and ptomaines, are removed, and the entire aspect of the case changed, by 1 to 3 grains of Calomel.—*Broadbent.*

In hiccough, one grain every hour is often successful. Its *local uses* are numerous: as an *insufflation*, or as a *gargle* in syphilitic sore throat; as an *injection* with or without Lime

Water, in blenorragia. In a wide range of skin affections, but especially syphilitic, it is invaluable as an ointment.

**For fumigation:**—A spirit lamp underneath a metal cup containing 20 grains of Calomel is placed under a cane-seated chair, on which the patient remains seated for twenty minutes, his body being covered with a blanket; an apparatus contrived by Mr. Lee is still better.

It is probable that the cholagogue action of Calomel is due to its having a peculiar stimulant action on the duodenum and ileum, so as to hurry the bile along the intestine and prevent its re-absorption.—*Brunton*.

Should not be applied to the eye when a patient is taking Potassium Iodide, for it will cause severe inflammation.

On the treatment of acute diseases, particularly enteric fever and appendicitis, by a judicious use of Calomel, Water, Heat and Quinine.—*B.M.J. '01, ii. 1054.*

Although not a specific, is a most useful remedy in typhoid fever.  
*B.M.J.E. '99, i. 4.*

**Dose.**—½ to 5 grains = 0·032 to 0·32 grammes.

Swiss, maximum single dose, 0·5 gramme; maximum daily dose, 2·0 grammes.

**Prescribing Notes.**—Calomel can be made into pills with Glucose, and if the pills be too small, they can be made larger by the addition of Milk Sugar. It is frequently prescribed with Compound Rhubarb Pill or Compound Pill of Colocynth and Henbane.

**Incompatibles.**—Bromides and Iodides, Nitro-Hydrochloric Acid, Hydrocyanic Acid, Chlorides of the Alkalies. Soap, even when neutral. Solutions of Lime, Potassium Hydroxide, or Sodium Hydroxide.

**Official Preparations.**—Lotio Hydrargyri Nigra, Pilula Hydrargyri Subchloridi Composita, and Unguentum Hydrargyri Subchloridi.

**Not Official.**—Calomel Cream, Emplastrum Calomelanos, Pilula Calomelanos c. Coloc., Pilula Hydrargyri Subchloridi et Jalapæ, Pilula Hydrargyri Subchloridi et Scammonii, and Pilula Zittmann.

**Official in Belg.,** Calomelas; Dan. and Norw., Calomel; Fr., Protochlorure de Mercure par volatilisation, also Chlorure Mercurieux Précipité; Dutch, Chloretum Hydrargyrosom; Swed., Chloretum Hydrargyrosom Precipitatum; Austr. and Hung., Hydrargyrum Chloratum Mite, both the levigated and that sublimed in steam; Ger. and Swiss, Hydrargyrum Chloratum, also Hydrargyrum Chloratum Vapore Paratum; Ital., Chloruro Mercurioso; Mex., Cloruro Mercurioso al Vapor, also Precipitado; Jap., Hydrargyrum Chloratum; Port., Chloreto Mercuroso, also Mercurio Doce; Russ., Hydrargyrum Chloratum Levigatum, also Hydrargyrum Chloratum Vapore Präparatum; Span.,

Cloruro Mercurioso (Sublimado, por el Vapor, and Precipitado); U.S., Hydrargyri Chloridum Mite.

The following synonyms are applied to Calomel obtained by precipitation:—Fr., Précipité Blanc; Port. and Span., Precipitatum Album. These terms do not mean, as in England, Ammoniated Mercury.

**LOTIO HYDRARGYRI NIGRA.** BLACK MERCURIAL LOTION. *B.P.Syn.*—BLACK WASH.

Triturate 30 grains of Mercurous Chloride with  $\frac{1}{2}$  fl. oz. of Glycerin and  $1\frac{1}{4}$  fl. oz. of Mucilage of Tragacanth; transfer to a bottle; add 2 fl. oz. of the Solution of Lime; shake well; add sufficient Solution of Lime to produce 10 fl. oz. of the Lotion. (about 1 in 146)

Glycerin and Mucilage of Tragacanth now added.

Useful application to syphilitic sores and foul ulcers.

Official in Dutch Supp. (Aqua Phagedænica Nigra), 1 in 100; Mex. (Agua Fagédenica Negra), 1 in 600.

**PILULA HYDRARGYRI SUBCHLORIDI COMPOSITA.** COMPOUND PILL OF MERCUROUS CHLORIDE. *B.P.* *Syn.*—COMPOUND CALOMEL PILL; PLUMMER'S PILL.

Mercurous Chloride, 1 oz.; Sulphurated Antimony, 1 oz.; Guaiacum Resin, in powder, 2 oz.; Castor Oil, 180 grains; Alcohol (90 p.c.), q.s. about 1 fl. dram. (1 in 4 $\frac{1}{2}$ )

Castor Oil reduced, and Alcohol (90 p.c.) added.

**Dose.**—4 to 8 grains = 0.26 to 0.52 gramme.

Official in Belg. (Pil. Plummeri), 3; U.S. (Pil. Antimonii Comp.), 1 in 4.

**UNGuentum HYDRARGYRI SUBCHLORIDI.** MERCUROUS CHLORIDE OINTMENT. *B.P.Syn.*—CALOMEL OINTMENT.

Mercurous Chloride, 1; Benzoated Lard, 9. (1 in 10)

Now 1 in 10 instead of 1 in 6 $\frac{1}{2}$ .

Useful in the itching of some skin affections, psoriasis and eczema, also in pruritus ani. A good application to syphilitic sores.

Official in Fr. (Pommade de Chlorure Mercureux), Ital. (Pomata di precipitato bianco), 1 in 10; Port. (Pomada de Mercurio Doce), 1 in 10; Mex. (Pomada de Cloruro Mercurioso), 1 and 20; Span. (Pomada de Cloruro Mercurioso), 2 in 17.

**Not Official.**

**CALOMEL CREAM.**—Calomel, 10 grains; Vaseline to 1 oz.—Lock.

**EMPLASTRUM CALOMELANOS.** *Syn.* EMPLASTRUM ALBUM.—Contains 20 p.c. of Calomel, spread on silk or other suitable material.

**PILULA CALOMELANOS C. COLOC.**—Calomel, 1 grain; Compound Extract of Colocynth,  $3\frac{1}{2}$  grains; Ipecacuanha,  $\frac{1}{2}$  grain.—*Middlesex.*

**Dose.**—One or two pills.

**PILULA HYDRARGYRI SUBCHLORIDI ET JALAPÆ** (House Pill).—Calomel, 1 grain; Jalap, 3 grains; Syrup of Glucose, *q.s.*; in one pill.—*St. Bartholomew's.*

**PILULA HYDRARGYRI SUBCHLORIDI ET SCAMMONII.**—Calomel, 1 grain; Scammony, 3 grains; Syrup of Glucose, *q.s.*; in one pill.—*St. Bartholomew's.*

**PILULA ZITTMANN.**—Calomel, 2 grains; Compound Extract of Colocynth, 5 grains; Extract of Henbane, 2 grains. Make two pills.—*Lock.*

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## HYDRARGYRUM AMMONIATUM.

AMMONIATED MERCURY.

*B.P.Syn.*—AMMONIO-CHLORIDE OF MERCURY; MERCURIC-AMMONIUM CHLORIDE; WHITE PRECIPITATE.

$\text{NH}_2\text{HgCl}$ , eq. 249·93.

It is known as *infusible white precipitate*.

The *fusible* variety is obtained by adding a solution of Mercuric Chloride to a mixture of Ammonium Chloride and Ammonia till the precipitate ceases to redissolve. It has the formula  $\text{HgCl}_2 \cdot 2\text{NH}_3$ .

**Solubility.**—Soluble in Hydrochloric Acid. Insoluble in Water, Alcohol (90 p.c.) and Ether.

**Medicinal Properties.**—Never given internally. Used in the form of ointment for chronic and parasitic skin diseases, impetigo, herpes, ringworm and scabies. The ointment is used for pediculi, but the powder can be used alone or mixed with Rose Water, and the unpleasantness of greasing the linen avoided.

**Official Preparation.**—Unguentum Hydrargyri Ammoniatum.

**Antidotes.**—Stomach-tube or an emetic, preceded by raw eggs and raw flour and water.

**Official in Austr. and Hung., Hydrarg. Bichloratum Ammoniatum; Belg., Præcipitatum Album; Dan., Norw., and Swed., Chloretum Amido-Hydrargyricum; Dutch, Chloretum Hydrargyrico-ammonicum; Ger. and Jap., Hydrargyrum Præcipitatum Album; Ital., Cloramiduro di Mercurio; Russ. and Swiss, Hydrargyrum Amidato-bichloratum; U.S., Hydrargyrum Ammoniatum Ph. Lond. 1788, Calx Hydrargyri Alba.**

The synonyms, Fr., *Précipité Blanc*; Port. and Span., *Præcipitatum Álbum*; apply to Calomel and *not* to Hydrargyrum Ammoniatum.

**UNGuentum Hydrargyri ammoniatI.**  
**AMMONIATED MERCURY OINTMENT.** *B.P.Syn.*—WHITE PRECIPITATE OINTMENT.

Aminoniated Mercury, 1; Paraffin Ointment, white, 9.  
 (1 in 10)

Now made with White Paraffin Ointment in place of Simple Ointment.

**Official** in Dutch, Ung. Chloreti Hydrargyrico-ammonici, 1 in 10; Ger., Jap. and Swiss, Ung. Hydrargyri Album; and Russ., Ung. Hydrargyri Amidato-bichlorati, 1 in 10; U.S., 1 in 10.

**Lowndes' Cream.**—Ammoniated Mercury Ointment, 1; Zinc Ointment, 3; Glycerin, 2; form a cream.

## **HYDRARGYRUM CUM Creta.**

MERCURY WITH CHALK.

*B.P.Syn.*—GREY POWDER.

A dull grey powder made by thoroughly mixing 1 of Mercury with 2 of Prepared Chalk.

**Solubility.**—Insoluble in Water.

**Medicinal Properties.**—Chiefly given to children as a cathartic; suitable for the prolonged administration of Mercury in syphilis.

**Dose.**—1 to 5 grains = 0·06 to 0·32 grammes.

**Prescribing Notes.**—*Best given as a powder by itself, or with Rhubarb; sometimes in cachets; but when required to be made into pills, 'Diluted Glucose' is the best excipient.*

**Official** in Dutch Supp., 1 in 6; Swed., same as Brit.; Mex., Polvo de Mercurio Calcáreo; Port., Mercurio com Carbonato de Cal, 3 in 10; U.S., 3·8 in 10.

## **HYDRASTIS RHIZOMA.**

HYDRASTIS RHIZOME.

The dried Rhizome and Roots of *Hydrastis Canadensis*.

Hydrastis contains the alkaloids—Berberine (3 to 4 p.c.), Hydrastine (about 2 p.c.), and Canadine.

**Medicinal Properties.**—Tonic, nervine stimulant, haemostatic, astringent, stomachic. Useful in chronic catarrhal conditions of the mucous membranes, especially that of the uterus.

Recommended in uterine haemorrhage.—*L.* '85, ii. 733; '87, i. 391; '87, ii. 1287; '88, i. 868; '88, ii. 133; *B.M.J.* '87, ii. 1349;

'88, ii. 123. The fluid extract is a sovereign remedy as a preventive in spontaneous epistaxis.—*M.A.* '95, 246. It may be used internally or as a 5 p.c. solution in water as a spray; internally also in aggravated cases of hyperidrosis.—*M.A.* '95, 322. In dyspepsia.—*L.* '85, ii. 885. Used locally in chronic pharyngitis.—*L.* '89, i. 549.

20 to 30 drops of the fluid extract for controlling night sweats.—*Pr. lv.* 624.

In chronic bronchitis.—*B.M.J.E.* '97, i. 84; '97, ii. 60; *Pr. lx.* 224.

**Prescribing Notes.**—*Equal parts of the Tinetur and Water, or 1 of the Liquid Extract to 19 of Water forms a useful lotion.*

**Official Preparations.**—Extractum Hydrastis Liquidum and Tinctura Hydrastis.

**Official** in Austr., Dan., Dutch, Fr., Ger., Ital., Mex., Norw., Russ., Swed., Swiss and U.S.

### EXTRACTUM HYDRASTIS LIQUIDUM. LIQUID EXTRACT OF HYDRASTIS.

20 of Hydrastis Rhizome, exhausted by percolation with Alcohol (45 p.c.), reserving the first 17 and evaporating the remainder to a soft Extract which is dissolved in the first portion, and the whole made up with Alcohol (45 p.c.) to 20.

(1 in 1)

*Ph. Ger.* Fluid Extract is standardised to contain 2 p.c. by weight of Hydrastine.

**Dose.**—5 to 15 minims = 0·3 to 0·9 c.c.

**Official** in Austr. Add., Dan., Dutch, Ger., Ital., Mex., Norw., Russ., Swed., Swiss and U.S., all 1 in 1; Fr. and Mex. have a solid extract.

Shoemaker has used the fluid extract as a stimulant and astrin-gent application in skin diseases.—*L.* '85, ii. 87.

### TINCTURA HYDRASTIS. TINCTURE OF HYDRASTIS

2 of Hydrastis Rhizome in No. 60 powder, percolated with Alcohol (60 p.c.) to yield 20. (1 in 10)

**Dose.**—½ to 1 fl. dram. = 1·8 to 3·6 c.c.

**Official** in Fr. and Ital., 1 and 5; U.S., 1 in 5.

### Not Official.

**HYDRASTIN.**—An eclectic remedy has been sold under this name for many years. It is now included in *B.P.C.* under the name **Hydrastinum**, and is an **extract** in fine powder, prepared from Hydrastis Rhizome with Alcohol (60 p.c.), care must be taken not to confound this with the Alkaloid Hydrastine.

A solid **extract** is **Official** in Fr. Supp.

**Dose.**—2 to 6 grains = 0·13 to 0·4 grammes.

The dose given in *B.P.C.* is ½ to 2 grains = 0·032 to 0·13 grammes.

**HYDRASTINA.**—An alkaloid ( $C_{21}H_{21}NO_6$ ) crystallising in white glistening four-sided prisms. ‘Hydrastine Cryst.’ melts at  $132^\circ C.$  ( $269\cdot6^\circ F.$ ).

**Solubility.**—1 in 120 of Alcohol (90 p.c.); 1 in 83 of Ether; 1 in 2 of Chloroform; the last two solvents do not dissolve Berberine; insoluble in Water and Petroleum Ether.

**Dose.**— $\frac{1}{4}$  to  $\frac{1}{2}$  grain = 0·016 to 0·032 grammes.

Hydrastine with Mono-calcium Phosphate forms a soluble compound which can be made to contain 71 p.c. of Hydrastine.—*A.J.P.* '97, 604; *P.J.* '98, i. 24.

**HYDRASTINÆ HYDROCHLORIDUM.**—Pale yellow semi-crystalline powder.

**Solubility.**—About 1 in 1 of Water and about 1 in 1 of Alcohol (90 p.c.).

**Dose.**— $\frac{1}{2}$  to 1 grain = 0·032 to 0·065 grammes.

Has been used as an ecbolic to induce premature labour; maximum daily dose,  $7\frac{1}{2}$  grains internally, 5 grains by hypodermic injection.—*L.* '86, i. 990; its physiological action.—*B.M.J.* '98, ii. 1052.

**HYDRASTININA.**—An oxidation product ( $C_{11}H_{11}NO_2$ ) of the natural alkaloid Hydrastine. Colourless or light yellow crystals, melting at  $116^\circ$  to  $117^\circ C.$  ( $240\cdot8^\circ$  to  $242\cdot6^\circ F.$ ). Not readily soluble in Water; but soluble in Alcohol, Ether and Chloroform.

**Official in Fr. Supp.**

**HYDRASTININÆ HYDROCHLORIDUM.**—Light yellow needle-shaped crystals, or a pale yellow crystalline powder. Soluble in its own weight of Water; 1 in 3 of Alcohol (90 p.c.).

**Medicinal Properties.**—Useful in endometritis, and uterine fibroid, in which excessive bleeding is a prominent symptom.—*L.* '90, i. 712; *T.G.* '90, 86; '92, 539, 699; *Pr.* xlv. 373. Valuable in menorrhagia.—*L.* '92, ii. 1350; *L.* 94, i. 1521.

Checks uterine haemorrhage, ameliorates night sweats in phthisis. During labour it undoubtedly strengthens feeble contractions and revives an inert uterus.—*B.M.J.E.* '98, i. 63.

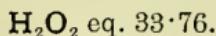
**Dose.**— $\frac{1}{2}$  to  $1\frac{1}{2}$  grains = 0·032 to 0·10 grammes, used hypodermically in a 10 p.c. aqueous solution.

*Ph. Ger.* maximum single dose, 0·03 gramme; maximum daily dose, 0·1 gramme.

**Official in Dutch Supp. and Ger.**

### Not Official.

#### HYDROGENII PEROXIDUM.



In its purest condition this is a colourless liquid, sp. gr. 1·452, evolving when heated 475 times its volume of oxygen gas. It is obtained by decomposing Barium Peroxide with Sulphuric Acid, and concentrating the filtered liquid in vacuo over Sulphuric

Acid. Commercially it is sold containing 10 or 20 volumes of available Oxygen.

#### Official Preparation.

### LIQUOR HYDROGENII PEROXIDI. SOLUTION OF HYDROGEN PEROXIDE.

An aqueous solution of Hydrogen Peroxide containing 9 to 11 volumes of available Oxygen.

**Medicinal Properties.**—It parts with its oxygen freely, and is a most powerful oxidising agent and disinfectant. It is a non-poisonous antiseptic. It does not precipitate albumen, and does not interfere with the action of Pepsin, Pancreatin, or Malt Extract. Used locally as a surgical dressing and for purulent discharges, and as a spray or swab in diphtheria. A spray of 10 volume strength is a good application to the throat in scarlet fever, and a 5 volume solution as a deodorising **gargle**. It is used for bleaching hair and delicate fabrics. It has been recommended internally in enteric fever, chronic bronchitis, and diabetes. It is not well adapted for hypodermic injection, because of the gas it evolves, although in cases of cyanide poisoning it is worth the risk of emboli.

Rapid healing of chancres by spray.—*M.A.* '95, 168.

As a spray in the treatment of *lupus vulgaris* and tubercular abscess.—*B.M.J.* '02, i. 448.

As a wash in the treatment of suppurative lesions of the skin.—*T.G.* '01, 639.

Injections of Oxygenated Water diluted with five times its volume of warm sterilised Water, and preceded by an evacuant injection, in the treatment of infantile dysentery.—*L.* '02, i. 392.

A bandage soaked with solution of Hydrogen Peroxide and allowed to dry on the wrist gave rise to spontaneous combustion. This was, no doubt, due to the solution containing Sulphuric Acid. The acid now used for its preservation is Phosphoric.

**Dose.**— $\frac{1}{2}$  to 2 fl. drm. = 1·8 c.c. to 7·1 c.c.

Should be well diluted.

**Official** in Dutch Supp., 10 volumes; Ital., Acqua Ossigenata, 12 volumes; Fr., Soluté Officinal d'Eau Oxygénée au dixième, 10 volumes; Mex., Agua Oxigenada, sp. gr. 1·452; U.S., Aqua Hydrogenii Dioxidi, 10 volumes.

**Prescribing Notes.**—Solution of Hydrogen Peroxide does not keep well, but is liable to lose Oxygen even to the extent of half its strength in a year. Phosphoric Acid is the best preservative and is now generally added for that purpose. When gently warmed it gives off Oxygen very readily. Alcohol and Ether have been used to preserve it, and a solution in Ether is sold under the name **Ozonic Ether**, the usual strength of which is about equal to four volumes of Oxygen.

## Not Official.

**GUTTÆ HYDROGENII PEROXIDI.**—Hydrogen Peroxide 10 volumes.—*Throat.* Two or three drops to be poured into the ear, for fetid discharges.

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**HYGROPHILA.**

The dried Herb and Root of *Hygrophila spinosa* is Official in the *Ind. and Col. Add.* for India and the Eastern Colonies.

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**HYOSCYAMI FOLIA.**

## HYOSCYAMUS LEAVES.

*B.P. Syn.*—HENBANE LEAVES.

The fresh Leaves, Flowers and Branches of *Hyoscyamus niger*; also the Leaves and the Flowering Tops, separated from the branches and carefully dried. Collected from the flowering biennial plants.

**Medicinal Properties.**—Hypnotic, mild diuretic, anti-spasmodic. Similar in action to Belladonna and Stramonium, but milder. Used in insomnia of whatever origin, when Opium, from its constipating and other objectionable properties, is not advisable. It is employed to diminish pain and allay irritability of the bladder, and to prevent the griping of purgative medicines, whilst it increases the peristaltic action; in visceral neuralgias and in asthma and all spasmodic affections; to allay the irritation of teething and prevent convulsions. Children bear Hyoscyamus well, the aged not so. In large doses it dilates the pupil of the eye. **Hyoscine** is much employed in maniacal delirium.

*Ph. Ger.* maximum single dose, 0·4 gramme; maximum daily dose, 1·2 gramme.

**Incompatibles.**—Vegetable Acids, Silver Nitrate, Lead Acetate, Liquor Potassæ or Soda.

**Official Preparations.**—Extractum Hyoscyami Viride, Succus Hyoscyami, and Tinctura Hyoscyami; used in the preparation of Hyoscinæ Hydrobromidum, and Hyoscyaminæ Sulphas. The extract is contained in Pilula Colocynthidis et Hyoscyami.

**Not Official.**—Hyoscyami Radix, Chloroformum Hyoscyami, Linimentum Hyoscyami, Tinctura Hyoscyami Radicis, Hyoscyamina, and Hyoscina (Scopolamine).

**Antidotes.**—The same as for Belladonna.

**Official in Austr., Dutch, Ger., Hung., Ital. (Giusquiamo), Russ., Swed., Swiss and U.S., Leaves; Jap., Herb; Belg., Dan., Fr.**

(Jusquiame noire), Norw., Port. (Meimendro), Mex. and Span. (Beleno), Leaves and Seeds.

**EXTRACTUM HYOSCYAMI VIRIDE. GREEN EXTRACT OF HYOSCYAMUS.**

A soft Extract, prepared from the juice expressed from fresh Henbane, the albuminous matters being separated at 200° F. (93.3° C.) and rejected.

**Dose.**—2 to 8 grains = 0.13 to 0.52 grammes.

*Ph. Ger.* maximum single dose, 0.1 grammes; maximum daily dose, 0.3 grammes.

It is generally used in smaller doses in pills to prevent the griping action of aperients.

Official in Austr., alcoholic from dried Leaves; Belg., juice from fresh Leaves, evaporated and mixed with an equal quantity of alcohol, filtered and evaporated; Dan., Norw. and Swed., made from Leaves with weak spirit; Dutch, alcoholic from fresh Herb; Dutch Supp., aqueous from fresh Herb; Fr., clarified juice from fresh Leaves evaporated, also alcoholic extract from the Seeds; Ger. and Jap., made with Water and Spirit from fresh Herb; Hung., juice from fresh Leaves, freed from Albumen and evaporated to a thick fluid, equal parts of Spirit added, filtered and again evaporated; Ital., from dried Leaves with dilute Alcohol; Mex., from dried Leaves and dilute Alcohol, also Fluid Extract; Port., aqueous from dried Leaves, also from fresh Leaves with Alcohol; Russ., made from Leaves with Water and Spirit; Span., clarified juice from fresh Leaves, also aqueous from dried Leaves, also alcoholic from dried Leaves; Swiss, from dried Leaves with dilute Spirit, 1 = 2 of Leaves, also Fluid Extract, 1 in 1; U.S., alcoholic extract from the dried Leaves, also Fluid Extract from the same.

**SUCCUS HYOSCYAMI. JUICE OF HYOSCYAMUS.**

3 of the juice, expressed from fresh Henbane, mixed with 1 of Alcohol (90 p.c.) to preserve it.

**Dose.**— $\frac{1}{2}$  to 1 fl. drin. = 1.8 to 3.6 c.c.

**TINCTURA HYOSCYAMI. TINCTURE OF HYOSCYAMUS.**

1 of Hyoscyamus Leaves and Flowering Tops in No. 20 powder, percolated with Alcohol (45 p.c.), to yield 10.

(1 in 10)

Now 1 in 10 instead of 1 in 8.

**Dose.**—30 to 60 minims = 1.8 to 3.6 c.c.

Much larger doses, 4 fl. dram. = 14.2 c.c., have been given in insomnia.

Official in Belg. and Port., 1 and 5, also fresh Herb and Alcohol, equal weights; Fr., 1 and 5, also Ethereal, 1 and 5 of Ether, sp. gr. 0.758, and Alcoolature with fresh Leaves and Spirit, equal

weights; Mex., 1 in 5, also Ethereal, 1 in 5; Span., 1 and 5; U.S., by percolation, 15 in 100. All by weight except U.S.

**HYOSCINÆ HYDROBROMIDUM** and **HYOSCYAMINÆ SULPHAS.** See separate headings.

**Not Official.**

**HYOSCYAMI RADIX.**—The dried root of *Hyoscyamus Niger* (biennial) collected in the spring. Introduced by Peter Squire in 1878. Contains on the average, about 0·15 p.c. of total alkaloid.

**Chloroformum Hyoscyami, Linimentum Hyoscyami,** and **Tinctura Hyoscyami Radicis,** are preparations corresponding in strength to the official preparations of the leaf.

**OLEUM HYOSCYAMI (Ger.).**—*Hyoscyamus* Leaves, 4; Alcohol (90 p.c.), 3; Olive Oil, 40. The leaves are macerated several hours with the Alcohol, then mixed with the Olive Oil and warmed on the water-bath till the Alcohol is dissipated.

**Official in Dan., Norw. and Swed., Oleum Hyoscyami Infusum,** Leaves, Alcohol, Ammonia and Olive Oil; Russ., Leaves, Alcohol and Sesame Oil; Austr. and Swiss, Leaves, Alcohol and Olive Oil; Fr., Huile de Jusquame, Leaves and Olive Oil.

**HYOSCYAMINA ( $C_{17}H_{23}NO_3$ ).**—A crystalline alkaloid obtained from the seeds of *Hyoscyamus niger*, the root of *Scopola carnatica*, and probably other allied plants, isomeric with Atropine but not identical with it.

It occurs as white needle-shaped crystals. Melts at 108·5° C. (227·3° F.). Only slightly soluble in Water, but freely in Alcohol (90 p.c.), in Chloroform, and in Ether. Probably constitutes the greater portion of the crystallizable alkaloid naturally existing in all the mydriatic drugs, and best obtained from the root of Scopola or Belladonna. Most of the commercial 'Atropine' consists principally of Hyoscyamine.

The salts used in medicine are the **Hydrobromide** and **Sulphate.**

**Dose.**— $\frac{1}{120}$  to  $\frac{1}{60}$  grain = 0·0005 to 0·001 gramme.

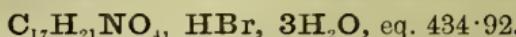
*Hager.* maximum single dose, 0·005 gramme; maximum daily dose, 0·015 gramme.

**Official in Dutch Supp. and Fr.**

**HYOSCINA (SCOPOLAMINE).**—An amorphous Alkaloid ( $C_{17}H_{21}NO_4$ , eq. 300·93), which is found in *Hyoscyamus Niger*, and various species of *Scopola*. It now represents what was formerly used in medicine under the name 'Amorphous Hyoscyamine.' It is usually employed medicinally in the form of **Hydrobromide**, **Hydrochloride**, and **Hydriodide.**

**HYOSCINÆ HYDROBROMIDUM.**

HYOSCINE HYDROBROMIDE.

*B.P. Syn.* — HYDROBROMATE OF HYOSCINE; SCOPOLAMINE HYDROBROMIDE.

Colourless, transparent, rhombic crystals, permanent in the air. U.S.P. adds, 'it should be kept in small well-stoppered vials.'

**Atroscine**, the crystalline variety of Hyoscine, forms a crystalline Hydrobromide.

**Solubility**.—1 in 4 of Water; 1 in 14 of Alcohol (90 p.c.); very slightly soluble in Chloroform or Ether.

B.P. states it is 'soluble in 1 part of cold Water,' which is incorrect: 1 in 4 is more nearly so.

**Medicinal Properties**.—Hypnotic and sedative. Highly recommended in all forms of violent mania and cerebral excitement.

In epileptic attacks of an hysterical form.—*M.A.* '95, 244.

As a mydriatic (1 grain to 1 oz.), in cases where Atropine is undesirable.—*B.M.J.* '94, ii. 598.

Incipient acute mania arrested by a single injection of  $\frac{1}{100}$  grain.—*B.M.J.* '97, ii. 652.

In mania,  $\frac{1}{100}$  grain hypodermically and after forty minutes,  $\frac{1}{200}$  grain by the mouth to procure seven hours' sleep, followed after an interval of two days by a dose of  $\frac{1}{85}$  grain hypodermically to induce a ten hours' sleep; Sodium Bromide in drachm doses being administered during the interval and for two days after the second sleep until 2 ozs. in all had been taken.—*B.M.J.* '03, i. 74.

In the palliative treatment of paralysis agitans, it is probably the most useful drug that has hitherto been tried,  $\frac{1}{200}$  to  $\frac{1}{150}$  grain in solution in Chloroform Water, administered by the mouth. Great caution required as regards the dose, and it is well not to begin with more than  $\frac{1}{150}$  or  $\frac{1}{160}$  grain.  $\frac{1}{75}$  grain given two or three times a day (by the mouth), for long periods without noting any bad effects.—*Pr. Ixiv.* 410.

In exophthalmic goitre,  $\frac{1}{800}$  grain.—*M.A.* '02, 280.

Two cases of paralysis agitans treated with the Hydrobromide, at first hypodermically, the dose being gradually increased from  $\frac{1}{250}$  to  $\frac{1}{120}$  grain, injected once a day. Subsequently administered in  $\frac{1}{150}$  grain doses dissolved in Chloroform Water, given twice daily by the mouth, gradually increasing the dose up to  $\frac{1}{96}$  grain.—*L.* '02, i. 1097.

Hyoscine is more sedative and more reliable as a hypnotic than Hyoscyamine; indeed, it has almost totally replaced it for this purpose. There can be little doubt, moreover, notwithstanding the many ill effects attributed to the use of Hyoscine (Scopola-

mine), and to its variable action, that as a hypnotic it has come to stay. Its solubility in Water and its applicability to hypodermic medication make it of extreme value in many conditions, particularly in the insane.—*L.* '99, ii. 142.

$\frac{1}{100}$  grain, and subsequently  $\frac{1}{200}$  grain, every thirty minutes to one hour, for from twenty-four to forty-eight hours, until the patient has taken from forty to sixty doses; in the treatment of the drug habit.—*T.G.* '02, 41, 71.

**Morphine-Scopolamine Anæsthesia.**—Hypodermic injection of  $\frac{1}{200}$  to  $\frac{1}{150}$  or even  $\frac{1}{60}$  grain of Scopolamine Hydrobromate with  $\frac{1}{4}$  grain of Morphine, to be repeated after one or two hours, previous to an operation. Very little Chloroform is required, and the patients sleep for hours after the operation, and do not complain of any pain.—*B.M.J.E.* '01, ii. 44.

Morphine-Scopolamine anæsthesia would be found useful in those cases where Chloroform and Ether are both contra-indicated, but that its action is not narcotic enough to admit of its taking the place of the general inhalation anæsthetics.—*B.M.J.E.* '03, i. 14.

G. Volkmann found it advisable to give 12 milligrammes (about  $\frac{1}{5}$  grain) of Scopolamine and 1.5 centigramme (about  $\frac{1}{4}$  grain) of Morphine four hours before the operation, and repeat the doses two hours later, and  $\frac{1}{4}$  hour before the operation he gives 3 m.g. (about  $\frac{1}{20}$  grain) of Scopolamine and 5 m.g. (about  $\frac{1}{12}$  grain) of Morphine. In the case of old people, or patients suffering from diseases of the internal organs, he employed smaller doses. In some cases the anæsthesia had to be deepened by Ether inhalation (given drop by drop).—*B.M.J.E.* '04, 1, 21.

**Dose.**— $\frac{1}{200}$  to  $\frac{1}{100}$  grain = 0.0003 to 0.0006 gramme.

*Ph. Ger.* maximum single dose, 0.001 gramme; maximum daily dose, 0.003 gramme.

**Prescribing Notes.**—Best given by hypodermic injection. When given by the mouth it may be conveniently dissolved in Chloroform Water.

**Not Official.**—Guttæ Hyoscinæ, Injectio Hyoscinæ Hypodermica, Hyoscinæ Hydrochloridum, and H. Hydriodium.

**Antidotes.**—Pilocarpine Nitrate, half a grain hypodermically, or  $\frac{1}{3}$  grain Morphine; then stomach-tube or emetics, followed by stimulants and artificial respiration.

**Official in Dutch Supp., Ger., Ital., Swiss and U.S.** The title 'Hyoscine Hydrobromide,' introduced into *Ph. Ger.* iii., has been replaced in *Ph. Ger.* iv. by 'Scopolamine Hydrobromide.'

#### Not Official.

**GUTTÆ HYOSCINÆ.**—Hyoscine Hydrobromide, 2 grains; Distilled Water, 1 fl. oz.—*London Ophthalmic.*

**INJECTIO HYOSCINÆ HYPODERMICA.**—A convenient Solution is made by dissolving Hyoscine Hydrobromide, 1 grain, in Distilled

Water, 500 minims, but the strength should always be indicated by the prescriber.

**Dose.**—2 to 5 minims = 0·12 to 0·3 c.c. as a sedative in nervous diseases, especially where there is much violence and excitement. When given by the mouth at least double the dose is required to produce the same effect.—*L.* '89, ii. 736.

**Hyoscine Discs.**— $\frac{1}{250}$  and  $\frac{1}{75}$  grain, *St. Bartholomew's*;  $\frac{1}{200}$  grain, *Guy's*.

**HYOSCINÆ HYDROCHLORIDUM** (Hyoscine Hydrochloride, Scopolamine Hydrochloride).—Large, colourless, prismatic crystals, or as a colourless crystalline powder, readily soluble in Water, and in Alcohol (90 p.c.).

**Dose.**— $\frac{1}{200}$  to  $\frac{1}{100}$  grain = 0·0003 to 0·0006 grammes.

**Official in Dutch Supp.** Maximum single dose, 0·001 gramme; maximum daily dose, 0·003 gramme.

**HYOSCINÆ HYDRIODIDUM** (Hyoscine Hydriodide, Scopolamine Hydriodide).—Colourless, transparent prismatic crystals. Soluble in Water, and in Alcohol (90 p.c.).

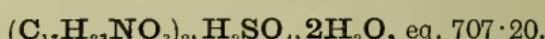
**Dose.**— $\frac{1}{200}$  to  $\frac{1}{100}$  grain = 0·0003 to 0·0006 grammes.

**Official in Dutch Supp.**

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## HYOSCYAMINÆ SULPHAS.

### HYOSCYAMINE SULPHATE.



White, slender, crystalline, hygroscopic needles, or an odourless, white, granular, hygroscopic powder.

**Solubility.**—2 in 1 of Water; 1 in 4½ of Alcohol (90 p.c.); very slightly soluble in Chloroform or Ether.

**Medicinal Properties.**—In small doses it is a sedative for mental excitement and insomnia, and in large doses it has been used for calming the excitement of delirium tremens and acute mania, but for this purpose it is superseded by the salts of Hyoscine.

Taken for sea-sickness in  $\frac{1}{100}$  grain doses three or four times a day, two or three days before embarking, and for the first days on board ship, until nausea has disappeared.—*B.M.J.* '93, ii. 596.

These are conveniently carried as half-grain pilules, made with 'Diluting Mixture,' p. 481.

**Dose.**— $\frac{1}{200}$  to  $\frac{1}{100}$  grain = 0·0003 to 0·0006 grammes.

**Hager.** maximum single dose, 0·005 gramme; maximum daily dose, 0·015 gramme.

**Official in U.S.**

## Not Official.

**HYOSCYAMINÆ HYDROBROMIDUM.**—In yellowish-white silky masses, or short prismatic crystals, soluble in Water, and in Alcohol (90 p.c.).

Dose.— $\frac{1}{200}$  to  $\frac{1}{100}$  grain = 0.0003 to 0.0006 grammes.

**Hyoscyamine Discs** (for hypodermic injection).— $\frac{1}{80}$  and  $\frac{1}{10}$  grain.—*St. Bartholomew's.*

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## Not Official.

**ICHTHYOCOLLA.**

## ISINGLASS.

The swimming bladder or sound of various species of *Acipenser*, prepared and cut into fine shreds.

This well-known substance was in the early London Pharmacopœias, and called Ichthyocolla or Fish Glue; it was used in medicine as a nutrient. It is still to be found in most of the Continental Pharmacopœias. It is used for fining Wine, for which purpose Gelatin does not answer. Russian Isinglass is reckoned the best quality. Isinglass is used for Court Plaster and Gold-beater's Skin.

Isinglass is not soluble in cold Water; Gelatin is.

Isinglass, 15 grains to the fl. oz. of Glycerin is useful in some skin diseases.

This is included among the Tests of the B.P., its solution being used for Tannic Acid, with which it forms an insoluble compound.

**Official in Austr., Belg., Fr., Hung. and U.S.; Dan., Jap., Norw. and Russ., Colla Piscium; Ital., Colla de Pesce; Mex., Cola de Pescada; Port., Gelatina de Peixe; Span., Ictiocola.**

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## Not Official.

**ICHTHYOL.**

## AMMONIUM ICHTHYOLSULPHONATE.

A reddish-brown, syrupy liquid, with igneous bituminous odour and taste. Obtained by the action of Sulphuric Acid on a mineral oil distilled from peculiar fossil deposits, principally fish, and subsequent neutralisation with Ammonia.

**Solubility.**—Entirely soluble in Water, partly soluble in Alcohol (90 p.c.) and Ether, entirely in a mixture of both.

It mixes readily with Glycerin, Fats, Oils, Soft Paraffin, and Lanolin.

**Medicinal Properties.**—Used both internally and externally for eczema, psoriasis, and also for chronic rheumatism; as an application in pruritus and prurigo.

The following formula is recommended for eczema: Litharge, 10; Diluted Acetic Acid, 30; boil down to 20, add Olive Oil, Lard, and Ichthyol of each 10, all by weight, to make an Ointment. *L.* '83, i. 334. It is better to boil down to 13, as Water separates from the Ointment if evaporated only to 20 as directed.

For uterine affections it is used with Glycerin as a tampon.—*L.* '90, i. 1142; '91, i. 55.

As a gargle in acute pharyngitis.—*L.* '94, ii. 1113. As a paint (20 p.c. sol.) for foot blisters.—*T.G.* '95, 56. As 10 p.c. antiseptic injection in vesical catarrh, *M.A.* '95, 139; and in gonorrhœa, *T.G.* '93, 349; *Pr.* lii. 370. 1 to 2 p.c. aqueous solution used as irrigations in gonorrhœa.—*L.* '97, i. 1165; *T.G.* '96, 350.

Given to a limited extent and has been sometimes beneficial in some hyperæmic diseases like acne rosacea.—*L.* '03, i. 785.

As an ointment composed of Ichthyol, 1; Vaseline, 1; applied to the pustules and surrounding skin in smallpox.—*B.M.J.E.* '03, ii. 24.

In the treatment of pruritus vulvæ, as a 15 p.c. ointment made with Lard.—*T.G.* '99, 319.

Ichthyol in 3 grain doses recommended in urticaria.—*B.M.J.E.* '95, i. 16. Ichthyol internally recommended in phthisis.—*L.* '94, i. 1521; *B.M.J.E.* '95, i. 51; '95, ii. 28; *P.J.* '95, ii. 51; '96, ii. 484; *B.M.J.E.* '99, i. 60.

Ichthyol applied so as to cover the healthy skin beyond the affected part modifies, and distinctly shortens the duration of, erysipelas; 30 to 60 p.c. Ointment, or 10 p.c. Collodion for sensitive skins.—*T.G.* '91, 862; '92, 294, 684; *M.A.* '95, 249; *B.M.J.E.* '94, i. 24, 43; as a 5 to 10 grain suppository in prostatitis.—*B.M.J.E.* '93, ii. 24.

It is not without danger, as an application of 1 Ichthyol and 5 Vaseline to a child four years old produced stupor for twelve hours, but it completely recovered.—*B.M.J.* '84, ii. 1013.

Zinc Oxide, 20; Magnes. Carb., 10; Ichthyol, 1 to 2; useful for burns of the first degree. Calcii Carb., 10; Zinc Oleatis, 10; Aq. Calcis, 10; Ichthyol, 1 to 3; for extensive burns.—*B.M.J.E.* '95, ii. 92.

*Injectio Ichthyol (pro urethrâ) 2 to 5 p.c.—Lock.*

Dose.—15 to 30 grains = 1 to 2 grammes.

**Prescribing Notes.**—In pill made up with a mixture of *Althaea* 3, *Liquorice Powder* 3, and *Compound Tragacanth Powder* 2; 4 of this powder to 2 of *Ammonium Ichthyol* or to 4 of *Sodium Ichthyol*. Also given in capsules, and Compressed Tablets.

The Oils of *Citronella*, *Eucalyptus*, and *Pinus Sylvestris* have been suggested for disguising the odour of Ichthyol in external applications. For internal use, Milk, Chocolate, or Oil of Peppermint have been used. Essence of Almonds is also very good.

When Ichthyol is ordered, the Ammonium salt is generally understood; the Sodium salt has similar properties, is more of a solid, and makes a smaller pill.

Diluted with Vaseline or Lanolin to form a 10 to 50 p.c. Ointment; also used as a 10 to 20 p.e. Collodion.

Lithium, Magnesium and Zinc Ichthyolsulphonates have been employed medicinally. The Magnesium salt makes a suitable pill-mass, and may be prepared by making 120 grains of the Ammonium salt and 15 grains of light Calcined Magnesia into a paste with Water, and evaporating to dryness on a water-bath. This brown powder, 2 parts of which are equal to 3 of the Ammonium salt, will make nice pills with a drop or two of Water.

When dispensed with Potassium Bromide, a turbid brown precipitate settling to a sticky mass is thrown out, and adheres to the bottle; the addition of Mucilage of Acacia does not prevent this.

For pessaries a gelatin basis with Ichthyol, after a time becomes hard and insoluble. They keep best when made with cocoa-butter alone. 3 grains of Ichthyol with 12 grains of Oil of Theobroma make a good suppository.

**Incompatibles.**—Alcohol, Alkaline Hydrates and Carbonates, Mineral Acids, and Potassium Bromide. Alkaloids are incompatible with Ammonium Ichthyolsulphonate, and decompose it with formation of an Ichthyolsulphonate of the alkaloid, and liberation of Ammonia. With alkaloidal salts a double decomposition takes place.

**Official in Dutch Supp., Ital. (Ittiolo), Russ. and Swiss.** The Dutch Supp. also includes an **Acidum Sulfoichthyolicum**.

**UNGUENTUM ICHTHYOLIS.**—Ichthyol, 40 grains; Salicylic Acid, 8 grains; Soft Paraffin to 1 oz.—London.

**UNGUENTUM ICHTHYOLIS COMPOSITUM.**—Ichthyol, 1; Solution of Lime, 9; Hydrous Wool Fat, 5; Soft Paraffin (yellow), 10; Zinc Ointment, 5.—Guy's.

**NATRIUM SULPHO-ICHTHYOLICUM** (Sodium Ichthyolsulphonate).—A brownish-black tar-like mass, with a bituminous odour.

**Solubility.**—It makes a somewhat turbid solution with Water; dissolves in a mixture of equal weights of Alcohol and Ether. It is soluble in Benzol.

**Medicinal Properties.**—The same as the Ammonium salt.

**Official in Dutch Supp.**

**ICHTHOFORM** (Formaldehyde Ichthyolsulphonate).—A blackish-brown powder, possessing a bituminous odour, insoluble in Water, and in Alcohol (90 p.c.). Introduced as an intestinal antiseptic.

**Dose.**—10 to 20 grains = 0·65 to 1·3 grammes.

**FERICHTHYOL** (Iron Ichthyolsulphonate).—A dark, blackish-brown, non-hygroscopic, amorphous powder. Soluble in Water. Has been given in anaemia.

**ANYTIN.**—Under this title a 33 p.c. aqueous solution of Ichthyolsulphonic Acid has been introduced into medicine. It possesses the property of rendering soluble in Water substances which are otherwise insoluble, or nearly so. The compounds so produced are known as Anytols, and Meta-cresol Guaiacol,

**Camphor and Iodine-Anhydros** have received some attention as medicinal agents, chiefly as antiseptics.

**THIOL**.—An artificial substitute for Ichthyol, prepared by the action of Sulphur on gas oil, and subsequent treatment with Sulphuric Acid. It is supplied in two forms, a powder and a liquid; it is soluble in Water and almost odourless.

Useful in acute forms of erythema, in erysipelas, and in inflammatory diseases of women, also in pruritus of the female genitals.—*Pr. lvi.* 565.

A 20 to 40 p.c. solution is used for erysipelas in same manner as Ichthyol.—*B.M.J.E.* '94, i. 103; *T.G.* '94, 627.

**ICHTHALBIN** (Albumen Ichthyolsulphonate).—A greyish-brown powder, almost odourless and tasteless. Insoluble in Water, decomposed by alkalis. Recommended for internal use.

**Dose**.—7½ to 30 grains = 0·5 to 2 grammes per diem.

**Tumenol**.—A similar body to Ichthyol, is a thick dark brown liquid. It is a mixture of Tumenolsulphone (**Tumenol Oil**) and Tumenolsulphonic Acid (**Tumenol Powder**).

**Petrosulfol**.—A dark brown thick syrupy substance. Soluble in Water. It is somewhat similar in its therapeutic properties to Ichthyol.

### Not Official.

#### IGNATIA AMARA.

The Seed of *Strychnos Ignatii*.

**Medicinal Properties**.—Similar in action to Nux Vomica.

**Official in Fr., Mex., Port. and Span.**

**EXTRACTUM IGNATIÆ AMARÆ**.—Prepared by percolating Ignatia beans with Alcohol (90 p.c.), and evaporation.

Tonic, given in debility of the digestive organs.

**Dose**.—½ to 1 grain = 0·008 to 0·065 gramme in a pill three times a day.

**TINCTURA IGNATIÆ AMARÆ**.—1 of Ignatia Beans, percolated with Alcohol (70 p.c.), to yield 10.

**Dose**.—5 to 20 minims = 0·3 to 1·2 c.c.

**Official in Mex.**, Tintura de Cabalongas, 1 in 5.

### INFUSA.

#### INFUSIONS.

Infusions, though generally made with boiling Water, are in some cases ordered to be made at a lower temperature, as Infusum Calumbæ, the starch of which would be dissolved by boiling Water. The mucilage and vegetable albumen present are, however, dissolved by cold Water, and these render the infusion liable to change.

When the infusion is to be made with boiling Water the pot or vessel should be first rinsed with boiling Water. The ingredients should be suspended immediately under the surface of the Water, or otherwise should be stirred from time to time during infusion.

There is a very large demand for so-called concentrated infusions ; but although very convenient and comparatively economical they have not the same characters as the freshly made infusions. B.P. '98 has included some Liquores Concentrati which are intended to represent Concentrated Infusions ; they are fluid extracts, prepared with weak spirit (Alcohol 20 p.c.).

There are no General Directions given in the British Pharmacopœia for the preparation of Infusions.

*General Directions given in German Pharmacopœia.*—Infusions for which the amount of the respective substances is not specified, are prepared so that 10 parts of strained product are obtained from 1 part of substance. In the case of substances for which a limit of dose is given, the quantity of substance is to be specified by the physician.

*Directions in United States Pharmacopœia.*—An ordinary Infusion, the strength of which is not directed by the physician nor specified by the Pharmacopœia, shall be prepared as follows : Put 10 of the substance into a suitable vessel, provided with a cover, pour upon it 200 of boiling Water, and let it stand half-an-hour ; then strain and pass enough Water through the strainer to make the Infusion measure 200 parts. The strength of Infusions of energetic or powerful substances should be specially prescribed by the physician.

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### Not Official.

#### INULA.

#### ELECAMPANE.

The Root of *Inula Helenium*. It contains large quantities of Inulin, a body allied to starch ; also a crystalline bitter substance, Helenin or Alantcamphor.

**Official in Belg., Dutch, Fr., Mex., Port., Span. and U.S.**

**HELENIN** ( $C_6H_8O$ ).—Colourless, acicular crystals, almost insoluble in Water, but readily soluble in hot Absolute Alcohol, Ether, and Volatile Oils. Has been found to possess powerful antiseptic properties, and has been given in broncho-pneumonia, tuberculosis, and diphtheria.

**Dose.**— $\frac{1}{4}$  to 2 grains = 0.016 to 0.13 grammes.

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## IODOFORMUM.

IODOFORM. TRI-IODOMETHANE.

$\text{CHI}_3$ , eq. 390·61.

The shining, lemon-yellow, small hexagonal crystals are Official ; but for dispensing purposes this is supplied as a fine crystalline **Powder**. There is also a **Precipitated Iodoform**, which, however, has a tendency to agglomerate. Iodoform has an unpleasant characteristic odour and taste.

**Solubility.**—Very sparingly soluble in Water ; 1 in 7 of Ether ; 1 in 14 of Chloroform ; 1 in 120 of Alcohol (90 p.c.). It is also soluble in the fixed and volatile Oils, and about 1 in 100 of Glycerin ; 1 in 30 of Olive Oil ; 1 in  $3\frac{1}{3}$  of Carbon Bisulphide ; sparingly in Petroleum Spirit.

Precipitated Iodoform frequently gives a turbid solution in Chloroform and Carbon Bisulphide, owing to the dampness of the powder, the adhering water being insoluble in those fluids. It rapidly dries on free exposure to air, and will then form a clear solution.

**Medicinal Properties.**—Antiseptic, deodorant and local anaesthetic. Useful in cleansing foul ulcers, buboes, soft chancres, or syphilitic sores, the **powder** being applied, or an **ointment** (1 drn. to 1 oz.), or a solution in Oil of Eucalyptus. Used as a deodorant, and to relieve the pain of cancer and abate the progress of the disease ; as a soothing application to burns ; also to relieve neuralgia, goitre, and glandular enlargements ; as a **suppository** in chronic prostatitis, in haemorrhoids and anal fissure.

As an antiseptic, Iodoform in fine powder, alone or mixed with Boracic Acid or Bismuth, is used as an **insufflation** for ulcerated throat or for ozæna, and as a packing in bone cavities.—*L.* '93, ii. 131.

**Whitehead's Varnish** is Compound Tincture of Benzoin, in which Ether (sp. gr. 0·735) has been substituted for Alcohol (90 p.c.), and contains 10 p.c. of Iodoform.

To prevent pitting in smallpox, *L.* '86, ii. 889 ; injections of Iodoform in goitre, *Pr.* lvi. 334 ; in tuberculous disease of the knee joint, *B.M.J.* '97, ii. 397.

A stopping for cavities of the bone ; Iodoform, 30 to 60 ; Spermaceti, 40 ; Sesame Oil, 20.—*B.M.J.* '01, ii. 46.

Daily hypodermic injections of 0·05 grammes of a mixture consisting of Iodoform, 1·5 ; Eucalyptol, 10 ; Liquid Vaseline, 0·5 ; in recurrent haemoptysis in the early stage of tuberculosis.—*Pr.* lxii. 705.

**Dose.**— $\frac{1}{2}$  to 3 grains = 0·032 to 0·19 grammes.

*Ph. Ger.* maximum single dose, 0·2 grammes ; maximum daily dose, 0·6 grammes.

**Prescribing Notes.**—*The Iodoform should be finely powdered, or still better, use precipitated Iodoform, and suspend it with Mucilage of Aeaea for a mixture or lotion; or it may be given in pills made with Glucose or  $\frac{1}{2}$  of its weight of Compound Powder of Tragacanth and Dispensing Syrup, or Diluted Glucose, q.s. to mass.*

*To cover the smell of Iodoform, Oil of Geranium (5 minimis to 2 drm.) answers very well, as does also Menthol, 2 to 98. Both of these are good, and next after them comes Coumarin, 2 to 98.*

*The odour of Iodoform can be removed from the hands by rubbing them with Oil of Turpentine; rubbing with Orange-flower Water is also useful.*

**Incompatible.**—Iodoform is incompatible with Calomel.

**Official Preparations.**—Suppositoria Iodoformi and Unguentum Iodoformi.

**Not Official.**—Iodoform antiseptic dressings, Bougies of Iodoform and Eucalyptus, Collodium Iodoformi, Emulsio Iodoformi, Gossypium Iodoformi, Injectio Iodoformi, Insufflatio Iodoformi, Nebula Iodoformi, Pastillus Iodoformi, Pulvis Iodoformi Compositus, Unguentum Iodoformi cum Atropina, Eka-Iodoform, Iodoformin, Iodoformogen, Di-iodoform, Iodol, Iodolene, Europhen, see p. 473, Loretin, see p. 529, Iodo-Salicylic Acid, see p. 45.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.; Dutch Supp. (Iodoformum Desodoratum), Coumarin 1, Iodoform 999.**

#### SUPPOSITORIA IODOFORMI. IODOFORM SUPPOSITORIES.

3 grains of Iodoform in each, with Oil of Theobroma.

#### UNGUENTUM IODOFORMI. IODOFORM OINTMENT.

Iodoform, in fine powder, 1; Yellow Paraffin Ointment, 9.  
(1 in 10)

Now made with Yellow Paraffin Ointment in place of Benzoated Lard.

**Official in Dutch Supp., Mex. and U.S., 1 in 10.**

#### Not Official.

**IODOFORM ANTISEPTIC DRESSINGS.**—Gauze, 10 and 20 p.c., Fr. Supp. (Gaze Iodoformée), and Ital., 10 p.c., Wool and Lint, 10 p.c.

**BOUGIES OF IODOFORM AND EUCALYPTUS FOR GONORRHEA (Cheyne).**—Iodoform, 5 grains; Oil of Eucalyptus, 10 minimis; Oil of Theobroma, 35 grains in each bougie, which should be 4 inches long and the diameter of No. 10 catheter.

**Treatment.**—The patient to pass water, then lie on his back. Introduce the bougie (first dipped in Eucalyptus Oil or Carbolic Oil 1 in 20), close the orifice with a pad of Boracic Lint covered with Gutta-percha tissue, secure in position with strapping.

The patient should refrain from passing water for four or five hours. If the case be severe the introduction of the bougie is repeated after passing water. The next day use an injection of Zinc Sulphocarbolate, 2 grains to 1 fl. oz., for two or three days; and on the third or fourth day, when the symptoms have entirely subsided, use an injection of Zinc Sulphate, 2 grains to 1 fl. oz. The treatment can be commenced as early as the first day or as late as the seventh day of the disease. The patient must abstain from Alcohol.—*B.M.J.* '80, ii. 125; *L.* '82, ii. 176, 213.

**COLLODIUM IODOFORMI.**—Iodoform, 1; Flexile Collodion, 9.—*Guy's.*

**EMULSIO IODOFORMI.**—Iodoform, in minute crystals, 10 parts; Glycerin, 70 parts; Water, 20 parts. Rub the Iodoform to a smooth paste with the Glycerin, then add the Water. For local use only.

Iodoform, 1; Alcohol (90 p.c.), 1; Boiling Distilled Water, 2; Glycerin, 7.—*Great Northern and Guy's.*

**GOSSYPIUM IODOFORMI.**—Iodoform, 70 grains; Glycerin, 10 minimis; Cotton Wool, 60 grains; Ether and Absolute Alcohol are used as solvents. Contains about 50 p.c. of Iodoform.

**INJECTIO IODOFORMI.**—Iodoform 1, Mucilage of Tragacanth 2, Water 7.—*University.*

**INSUFFLATIO IODOFORMI.**—(For throat) Iodoform, 2; Dried Starch, 1; both in fine powder. (Aural) Iodoform, 1; Boric Acid, 3; both in fine powder.—*Throat.*

**NEBULA IODOFORMI.**—Iodoform, 40 grains; Ether (sp. gr. 0·735), 1 fl. oz.; dissolve. A strong antiseptic and detergent.

**PASTILLUS IODOFORMI.**—Iodoform in fine powder, 1 grain; Glycerin, 1 minim; Glyco-gelatin, 18 grains. For one pastille.

**PULVIS IODOFORMI COMPOSITUS.**—Iodoform in fine powder 1, Boric Acid 3. For external use only.—*East London for Children.*

**UNGUENTUM IODOFORMI CUM ATROPINA.**—Precipitated Iodoform, 60 grains; Atropine, 2 grains; Soft Paraffin, to 1 oz.; heat the Atropine and Paraffin till dissolved; stir, and while cooling add the Iodoform.—*London Ophthalmic.*

**EKA-IODOFORM.**—A lemon-yellow, crystalline lustrous powder, insoluble in Water. Soluble 1 in 75 of Alcohol (90 p.c.); 1 in 8 of Ether; 1 in 13½ of Chloroform. Stated to be a mixture of Iodoform and Paraformaldehyde. Introduced as a substitute for Iodoform.

**IODOFORMIN.**—A combination of Iodoform and Hexamethylenetetramine containing about 75 p.c. of the former. A white or pale yellow powder, insoluble in Water; soluble 1 in 170 of Alcohol (90 p.c.); 1 in 350 of Ether; 1 in 72 of Chloroform; also soluble in Acetone. Boiling Water, Acids, and Alkalies decompose it. Introduced as an Iodoform substitute.—*J.S.C.I.* '95,

820; '96, 469; '97, 757; C.D. '95, ii. 438; P.J. '95, ii. 455; '97, ii. 82; L. '96, i. 856.

**Iodoform** (Iodoformin Ethyl Iodide).—In yellow crystals or powder, insoluble in Water. Antiseptic.

**IODOFORMOGEN** (Iodoform Albuminate).—A pale lemon-yellow powder, possessing a faint odour of Iodoform. Insoluble in Water, Alcohol (90 p.c.), Ether or Chloroform. Used as a dusting powder. Introduced as an Iodoform substitute. — B.M.J. '98, ii. 1066; B.M.J.E. '98, i. 63.

**DI-IODOFORM** (Ethyleue Periodide).—Yellow prismatic needles. Insoluble in Water, soluble in Chloroform. Introduced as a substitute for Iodoform.—L. '93, ii. 1355; Pr. lii. 126; P.J. (3) xxiv. 622.

**IODOL** (Tetraiodpyrrol).—A light brown microcrystalline powder,  $C_4I_4NH$ , eq. 566·11, without taste, having a faint odour, and containing 90 p.c. of Iodine, and giving off Iodine at  $212^{\circ}$  F. ( $100^{\circ}$  C.).

**Solubility.**—Nearly insoluble in Water; 1 in 18 of Alcohol (90 p.c.), 1 in 150 of Chloroform, 1 in  $1\frac{1}{2}$  of Ether, 1 in 155 of Glycerin. It is stated to be soluble 1 in 3 of Absolute Alcohol, but the sample we examined gave 1 in  $6\frac{1}{2}$ .

**Medicinal Properties.**—Antiseptic; used for the same purposes as Iodoform, but it is free from the objectionable odour of the latter, and is stated not to be so poisonous. 1 p.c. of Menthol is added in nasal diseases to cover the odour of Iodol.

**Official in Dutch Supp., Ital., Mex., Russ. and Swiss.**

**IODOLENE** (Iodol Albuminate).—A light yellow powder, insoluble in Water and in Alcohol (90 p.c.). It occurs in two forms, one for internal use containing 10 p.c. Iodol, the other for external use containing 36 p.c. Antiseptic. Introduced as an Iodoform substitute. Has been used internally in syphilis, but has sometimes caused iodism.—B.M.J.E. '02, i. 91.

**Dose.**—15 to 30 grains = 1 to 2 grammes.

## IODUM.

### IODINE.

I, eq. 125·90.

Heavy, greyish-black, rhombic plates or prisms, possessing a metallic lustre and a characteristic peculiar odour. It is obtained from 'Kelp' (the ashes of sea weed). Iodine volatilises considerably at ordinary temperatures, and melts at  $107^{\circ}$  C. Commercial resublimed Iodine, if in large dry scales, may be reckoned at 100 p.c. It should be kept in well-stoppered bottles and in a cool place.

**Solubility.**—1 in 7000 of Water; 1 in 12 of Alcohol (90

p.c.) ; 1 in 4 of Ether ; 1 in 30 of Chloroform ; 1 in 6 of Carbon Bisulphide ; 1 in 65 of Glycerin ; soluble in an aqueous solution of Potassium Iodide.

**Medicinal Properties.**—Antiseptic, alterative, deobstruent, deodoriser, disinfectant ; locally it is irritant or vesicant according to the strength employed. Internally, largely used in form of Iodide, seldom as Iodine, in chronic rheumatism and in chronic inflammation of various kinds ; to promote absorption in hepatic and splenic enlargements, and in dropsies (pleuritic effusion, hydrocele, etc.). In the form of Potassium Iodide (10 to 30 grains three times a day), it is specific in the later stages of syphilis ; and in 30 grain doses three times a day it is very useful in aneurism, its most striking effect being the relief of the aneurismal pain ; valuable in actinomycosis. Most efficacious in glandular enlargements, as in bronchocele ; in all scrofulous conditions, such as enlarged glands of the neck and other regions, in chronically enlarged joints or bones, in many chronic diseases of the eye, nose, and ear, and as an alterative in obstinate mucous discharges ; caution, however, is required, as it may, when given in very large doses, occasionally cause wasting of healthy glands, such as the mammae and testes. 1 of the Tincture with 50 of Water forms an antiseptic lotion for washing out cysts. Externally the solution, ointment, and tincture are applied in chronic and parasitic skin diseases, in phthisis, pleurisy, pericarditis and bronchitis as a counter-irritant, and for chilblains ; the Tincture, either neat or diluted with an equal quantity of Water, is injected into the scrotal sac to cure hydrocele ; Morton's fluid is injected into the sac of spina bifida. A few drops of the Tincture in half a pint of hot Water may, along with Creosote or volatile Oils, be inhaled in some forms of chronic bronchitis and phthisis, and in the throat affection of scarlatina and measles. It is employed as a gargle, 1 or 2 of Tincture in 32 of Water for ulceration of the throat. One or two drops of the Tincture in a tablespoonful of Water every thirty minutes are often successful in checking vomiting. See also under 'Potassii Iodidum.'

Half a syringeful of a solution of Iodine 1, Potassium Iodide 2, and Water 50, injected into the genital region in tuberculous peritonitis.—*B.M.J.E.* '99, ii. 44.

**Dose.**— $\frac{1}{16}$  to  $\frac{1}{4}$  grain = 0.004 to 0.015 grammes.

*Ph. Ger.* maximum single dose 0.02 gramme, maximum daily dose 0.06 gramme.

**Prescribing Notes.**—Very rarely given internally in the solid form, except when loosely combined as in the Alkaloidal

Periodides, see p. 148. Occasionally administered as Tincture, which should be well diluted. The Pasta Iodi et Amyli is less irritating than many of the other Iodine preparations.

Iodine and solutions containing free Iodine stain the skin a yellowish-brown; this can be removed by Caustic or Carbonated Alkali or Sodium Thiosulphate. Several so-called colourless and non-staining preparations of Iodine have been suggested, but their medicinal action cannot be due to free Iodine, but to the compound of Iodine which is produced in each case, e.g. combinations of Iodine and Oleic Acid and the fixed and volatile Oils; also the colourless Tincture of Iodine (B.P.C.) which is practically a solution of Ammonium Iodide and Iodate.

In all the galenical preparations containing Iodine, Potassium Iodide is a constant ingredient, presumably with the intention of assisting the solution of the Iodine. In the case of aqueous solutions this is necessary, and an excess of Iodide is advantageous. In spirituous solutions, however, where the Iodide is scarcely more soluble than the Iodine, a much smaller quantity (if any) is required.

**Incompatibles.**—Alkalies, Metallic salts, Alkaloids.

**Official Preparations.**—Liquor Iodi Fortis, Tinctura Iodi and Unguentum Iodi. Used in the preparation of Syrupus Ferri Iodidi. Arsenic, Mercury, Potassium, Sodium, and Sulphur, Iodides are Official.

**Not Official.**—Causticum Iodi, Collodium Iodatum, Gossypium Iodatum, Inhalatio Iodi cum Conio, Glycerinum Iodi, Injectio Iodi, Injectio Iodi Hypodermica, Lugol's Solution, Lugol's Caustic, Pasta Iodi et Amyli, Pigmentum Iodi, Pigmentum Mandl, Pigmentum Picis cum Iodo, Tinctura Iodi Decolorata, Vapor Iodi, Vapor Iodi Compositus, Iodine Leaf, Iodi Trichloridum, and Iodipin.

**Antidotes.**—Emetics aided by demulcent drinks, Starch, Flour, etc., diffused in Water; Hypodermic Injection of Morphine to relieve pain.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

**LIQUOR IODI FORTIS. STRONG SOLUTION OF IODINE.  
LINIMENT OF IODINE, B.P. '85.**

Iodine,  $1\frac{1}{4}$ ; Potassium Iodide,  $\frac{3}{4}$ ; Distilled Water,  $1\frac{1}{4}$ ; Alcohol (90 p.c.), 9. (About 1 of Iodine in  $8\frac{1}{2}$ )

Formerly called Linimentum Iodi. Alcohol (90 p.c.) and Distilled Water replace the Rectified Spirit and Glycerin. The Potassium Iodide is increased.

**Official in Dutch Supp., Solutio Iodii Lugoli fortior, Iodine 1, Potassium Iodide 2, Water 22; and Solutio Iodii Lugoli mitior, Iodine 1, Potassium Iodide 2, Water 497; Fr., Soluté d'Iode Ioduré, Iodine 1, Potassium Iodide 1, Alcohol 10, Water 18;**

Norw., Solutio Superiodeti Kalici, Iodine 1, Potassium Iodide 2, Distilled Water 97; Port., Soluto Iodo-iodetado, Tincture of Iodine 6, Potassium Iodide 1, Water 13; U.S., Liquor Iodi Co., Iodine 1, Potassium Iodide 2, Distilled Water 17. All by weight.

### TINCTURA IODI. TINCTURE OF IODINE.

Iodine,  $\frac{1}{2}$ ; Potassium Iodide,  $\frac{1}{2}$ ; Distilled Water,  $\frac{1}{2}$ ; Alcohol (90 p.c.), q.s. to yield 20. (1 of Iodine in 40)

The Iodine and Iodide are first dissolved in a small quantity of water, as suggested in the previous edition of the *Companion*.

**Dose.**—2 to 5 minims = 0·12 c.c. to 0·3 c.c.

*Ph. Ger.* maximum single dose 0·2 gramme; maximum daily dose 0·6 gramme of the 1 in 10 Tincture.

**Tinctura Iodinei (Ph. Edinburgh).**—1 of Iodine in 16 of Alcohol (90 p.c.). It resembles the Tinctures of the Foreign Pharmacopœias in being without Potassium Iodide.

**Tinctura Iodi Aetherea (Sawyer).**—1 of Iodine in 40 of pure Ether.

**Official** in the following without the Potassium Iodide:—Austr., 1 and 15; Belg. and U.S., 1 in 14·3; Fr., Ital., Jap. and Mex., 1 and 12; Dan., Norw. and Swed., Sol. Iodi Spirituosa, 1 in 20; Swed. also includes Solutio Iodii Concentrata, 1 in 10; Dutch, 1 in 12 $\frac{1}{2}$ ; Ger., Hung. and Russ., 1 and 10; Port. and Swiss, 1 and 9; Span., Solucion Alcoholica de Iodo, 1 and 15. All by weight except U.S.

### UNGUENTUM IODI. IODINE OINTMENT.

Iodine, 20 grains; Potassium Iodide, 20 grains; Glycerin, 60 grains; Lard, 400 grains. (1 of Iodine in 25)

Now 1 in 25 instead of 1 in 31.

**Official** in Dutch Supp., Iodine 2, Potassium Iodide 5, Water 5, Ointment 90; Fr., Pommade d'Iodure de Potassium Ioduré, Iodine 1, Potassium Iodide 5, Benzoated Lard 40, Water 5; Hung., Tincture of Iodine 1, Simple Ointment 9; Mex., Pomada de Yodo, Iodine 1, Lard 30; Port., Pomada de Iodeto de Potassio Iodada, Iodine 1, Potassium Iodide 4, Water 5, Lard 40; Span., Pomada de Ioduro Potasico Iodado, Iodine 2, Potassium Iodide 6, Water 4, Lard 45; U.S., Iodine 4, Potassium Iodide 1, Water 2, Benzoinated Lard 93.

### Not Official.

**CAUSTICUM IODI.**—Iodine, 180 grains; Potassium Iodide, 60 grains; Alcohol (90 p.c.), 1 fl. oz.—*British Skin.*

Used in cases of lupus and of indolent (*i.e.* non-phagedænic) tertiary syphilitic ulcers.

**COLLODIIUM IODATUM (U.S.N.F.).**—Iodine, 1; Flexile Collodion, 19.

**GOSSYPIUM IODATUM** (Coton Iodé, Fr. Codex; Iodised Wool).

—Dry white wool impregnated with Iodine, and containing about 8 p.c. of the latter.

**INHALATIO IODI C. CONIO.**— $\frac{1}{2}$  to 1 fl. dram. of Succus Conii added to Vapor Iodi.

**GLYCERINUM IODI** (Morton's Fluid).—Iodine, 10 grains; Potassium Iodide, 30 grains; Glycerin, 1 fl. oz.—*Guy's*.

For spina bifida, inject 30 minims, without allowing the fluid contents of the tumour to escape.—*B.M.J.* '85, i. 1098; '86, i. 874; '87, ii. 1275.

**INJECTIO IODI.**—Tincture of Iodine, 1 fl. dram.; Water to 20 fl. oz.—*Samaritan*.

**INJECTIO IODI HYPODERMICA.**—*Throat* had three strengths: **Communis**, Tincture of Iodine, B.P. **Fortior**, 40 grains of Iodine in 1 fl. oz. of Absolute Alcohol; **Fortissima**, Iodine 360 grains, Potassium Iodide, 360 grains, Water to 1 fl. oz. Now omitted.

**Dose.**—3 to 8 minims = 0·18 to 0·47 c.c. of Communis and Fortior. 3 to 5 minims of Fortissima.

**PHENOL IODATUM.** *See p. 22.*

**LUGOL'S SOLUTION.**—Iodine, 20 grains; Potassium Iodide, 30 grains; Water, 1 oz. This was official as Liquor Iodi in B.P. '85, but omitted in '98. The proportions in Dutch Supp. are 1, 2, and 22.

**LUGOL'S CAUSTIC.**—Iodine, 1; Potassium Iodide, 1; Water, 2.

**PASTA IODI ET AMYLI.**—Starch, 1 oz.; Glycerin, 2 fl. oz.; Water, 6. fl. oz.; boil together, and when nearly cold add Solution of Iodine, B.P. '85, 1 fl. oz.—*University*.

**PIGMENTUM IODI.**—Iodine, 2; Potassium Iodide, 1; Glycerin, 4.—*British Skin*. Used to destroy vegetable parasites.

Tincture of Iodine, 1; Strong Solution of Iodine, 1.—*City Chest, Great Northern, Middlesex, St. Mary's, University*.

This is equivalent to 1 in 24 of Iodine; most of the Hospitals have a Pigmentum, varying in strength from 1 in 3 to 1 in 34, some with Glycerin, others without. Pigmentum Mandl is 1 in 73.

**PIGMENTUM MANDL.**—Iodine, 6 grains; Potassium Iodide, 20 grains; Oil of Peppermint, 5 minims; Glycerin, to 1 fl. oz.—*Throat*. Use, in granular pharyngitis.

In answer to an inquiry for the correct composition of Mandl's solution, several formulæ were given. That given in *Hager* is Carbolic Acid and Iodine, of each, 1; Potassium Iodide, 2; Glycerin, 100, but all the formulæ sent in reply, omitted the Carbolic Acid.—*P.J.* '02, i. 156, 181, 184, 200.

**PIGMENTUM PICIS C. IODO** (Coster's Paste).—Iodine, 120 grains; Rectified Oil of Tar, 1 fl. oz.—*British Skin, Middlesex*; dissolve cautiously, applying a gentle heat as required. The Oil of Tar is inflammable.

Specially recommended in cases of ringworm,

**TINCTURA IODI DECOLORATA (B.P.C.).**—Iodine, 250 grains; Alcohol (90 p.c.), 5½ fl. oz.; dissolve with a gentle heat: when cold add Stronger Solution of Ammonia, 10 fl. dram.; keep the mixture in a warm place until decolorised,\* after which dilute with Alcohol (90 p.c.) to make 20 fl. oz.

**Liquor Ammoniae Iodidi (Simpson).**—Liq. Ammon. Fortis, 2 fl. oz.; Iodine, 10 grains; Potassium Iodide, 20 grains; Alcohol (90 p.c.), 1 fl. oz.; dissolve.

Dutch Supp. includes a decolorised solution of Iodine made with Sodium Thiosulphate, Alcoholic Ammonia and Alcohol (90 p.c.), and the U.S.N.F. is a somewhat similar formula.

**VAPOR IODI (Inhalation of Iodine).**—Tincture of Iodine, 1 fl. dram.; Water, 1 fl. oz.; mix in a suitable apparatus, and having applied a gentle heat, let the vapour that arises be inhaled. This was Official in B.P. '67 and '85, but omitted in '98.

Tincture of Iodine 10 drops for each dry inhalation, without the aid of heat.

**VAPOR IODI COMPOSITUS.**—Tincture of Iodine,  $\frac{1}{2}$  oz.; Creosote, 1 fl. dram.; Liquefied Phenol, 1 fl. dram.; Rectified Spirit,  $\frac{1}{2}$  fl. oz. For dry inhalation.—*Great Northern.*

**IODINE LEAF.**—An ingenious method for the local application of Iodine as a counter-irritant, being two sheets of filter paper, one saturated with a solution of Potassium Iodide and Iodate, and the other with Acid Potassium Sulphate. When the papers are moistened and brought together, Iodine is liberated.—*L.* '02, i. 328.

**IODI TRICHLORIDUM (Iodine Trichloride).**—Orange-yellow crystalline masses evolving a powerful penetrating chlorinous odour. Soluble 1 in 1 of Water; soluble 1 in 1 of Alcohol (90 p.c.). Powerful antiseptic and disinfectant. Official together with Iodine Tribromide, in Dutch Supp.

**IODIPIN.**—Under this title two Iodine addition-compounds of Sesame Oil are known: one containing 10 p.c. Iodine, a pale straw-coloured transparent oily fluid; the other 25 p.c. a dark yellowish-brown viscid fluid. Both possess an oleaginous odour and taste, are insoluble in Water and in Alcohol (90 p.c.); soluble in all proportions of Ether and of Chloroform.

**Medicinal Properties.**—Recommended in the treatment of syphilis, bronchitis, bronchial asthma, emphysema and pleuritis. Has also been used in ophthalmic practice in affections of the eye occurring in the course of constitutional syphilis.—*B.M.J.E.* '00, ii. 80; '01, ii. 79; *M.A.* '02, 38.

As a test for the functional activity of the stomach.—*B.M.J.E.* '99, ii. 81.

**Prescribing Notes.**—*May be given in capsules, each capsule*

\* B.P.C. states that if not further diluted it may be prescribed as **Tinctura Iodi Decolorata Fortior**;

containing 2 grammes = 30 grains of the 25 p.c. preparation; or in emulsion, made with Gum Acacia and flavoured with Oil of Cinnamon or Peppermint. It may also be administered subcutaneously, as in the treatment of syphilis, or by inunction.

**Dose.**—1 to 6 fl. drm. = 3·6 to 21·0 c.c. of the 10 p.c. solution administered by the mouth. 150 to 300 grains = 10 to 20 grammes administered daily subcutaneously.

In cases of uterine fibroid, starting with 1 c.c. injected into the buttock and increasing up to 5 and 7 c.c. of the 25 p.c., injected into either buttock alternately, then 10 c.c. of the 10 p.c., and finally 10 c.c. of the 25 p.c., which latter is considered the full dose of Iodipin for ten consecutive days' use.—*L. '03, i. 959.*

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## IPECACUANHÆ RADIX.

### IPECACUANHA ROOT.

The dried Root of *Psychotria Ipecacuanha*.

The active principle resides in the bark, the inner or woody part contains but little.

From the experiments by Paul and Cownley (*P.J. (3) xxiv. 61*), it would appear (1) that the percentage of *total alkaloid* in Brazilian Ipecacuanha root does not vary much from 2 p.c. Rio Ipecacuanha root contains the three alkaloids in the following proportions as compared with Carthagena and Indian Ipecacuanha :—

Brazilian (root)—Emetine 1·45 p.c., Cephaeline 0·52 p.c., Psychotrine 0·04 p.c. Total 2·01 p.c.

Brazilian (stem)—Emetine 1·18 p.c., Cephaeline 0·59 p.c., Psychotrine 0·03 p.c. Total 1·80 p.c.

Columbian—Emetine 0·89 p.c., Cephaeline 1·25 p.c., Psychotrine 0·06 p.c. Total 2·20 p.c.

Indian—Emetine 1·39 p.c., Cephaeline 0·5 p.c., Psychotrine 0·09 p.c. Total 1·98 p.c.—Paul and Cownley, *P.J. '96, i. 321; '02, ii. 256.*

In 1893 it was stated by Paul (*P.J. (3) xxiv. 212*) that from so-called deëmetinised Ipecacuanha he had obtained nearly 0·5 p.c. of the ordinary alkaloids of Ipecacuanha; but it can now be obtained entirely free from Emetine (*Pulvis Ipecacuanhæ sine Emetina*).

**Medicinal Properties.**—Expectorant, diaphoretic, gastro-intestinal stimulant, cholagogue. Emetic, slow in action (20 to 30 minutes), and depressant in large doses. Used in whooping cough and croup to expel exudation or mænibrane as well as for its depressing effects on the circulation. Used in acute and chronic bronchitis when the phlegm is thick and scanty, and in winter-cough and phthisis; in gouty dyspepsia and biliousness. Ipecacuanha has long been

relied upon in the East for the cure of acute tropical dysentery. When the evacuations are frequent and accompanied with mucus and blood, 20 to 60 grains are given; and if the stomach rejects it, a little Opium is given with it, or a Mustard poultice applied to the epigastric region. It relieves some forms of vomiting, such as that of pregnancy or alcoholism, when given in small doses, 1 or 2 minims of the **Vinum** every half-hour. The diaphoretic effect is best obtained when given in the form of the Compound Powder. In small doses it is commonly added to aperient pills for chronic constipation. A **spray** of the Wine of Ipecacuanha has been strongly recommended by Ringer and Murrell for chronic bronchitis and asthma.

In pneumonia.—*L.* '02, i. 183.

Disappointing results with Ipecacuanha in the treatment of dysentery.—*B.M.J.* '99, i. 1151; '99, ii. 1413, 1474; '00, ii. 1370.

10 to 40 minims of the Wine three times a day in the treatment of epilepsy.—*L.* '98, ii. 751; *P.J.* '99, i. 293.

Applied to the bites and stings of insects.

**Dose.**—As an expectorant,  $\frac{1}{4}$  to 2 grains = 0·016 to 0·13 grammie; as an emetic, 15 to 30 grains = 1 to 2 grammes.

Swiss, maximum single dose, 0·1 grammie =  $1\frac{1}{2}$  grains; maximum daily dose, 0·5 grammie =  $7\frac{1}{2}$  grains; maximum dose as an emetic, 5 grammes = 77 grains.

**Prescribing Notes.**—*Prescribed in small doses as an auxiliary in alterative pills. The compound powder is frequently given in the form of a powder, pill, cachet, or Compressed Tablet. A good pill can be made by using Dispensing Syrup, q.s. Children tolerate large doses well.*

**Incompatibles.**—Lead and Mercury salts, vegetable Acids, astringent Infusions.

**Official Preparations.**—Of the **Root**, Extractum Ipecacuanhæ Liquidum, Pulvis Ipecacuanhæ Compositus, Trochiscus Ipecacuanhæ, Trochiscus Morphinæ et Ipecacuanhæ; of the **Liquid Extract**, Acetum Ipecacuanhæ and **Vinum** Ipecacuanhæ; of the **Compound Powder**, Pilula Ipecacuanhæ cum Scilla.

**Not Official.**—Syrupus Ipecacuanhæ, Syrupus Ipecacuanhæ Aceticus, Tinctura Ipecacuanhæ, Emetine, Emetine Hydrochloride, Emetine Hydrobromide, Cephaeline, Cephaeline Hydrochloride, Psychotrine.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

#### ACETUM IPECACUANHÆ. VINEGAR OF IPECACUANHA.

Liquid Extract of Ipecacuanha, 1; Alcohol (90 p.c.), 2; Diluted Acetic Acid, *q.s.* to make 20. (1 in 20)

Now made with the Liquid Extract, and Alcohol (90 p.c.) is added.

**Dose.**—10 to 30 minims = 0·6 to 1·8 c.c.

**EXTRACTUM IPECACUANHÆ LIQUIDUM.**  
LIQUID EXTRACT OF IPECACUANHA.

A Liquid Extract standardised to contain 2 to  $2\frac{1}{4}$  grains of the alkaloids in 110 minims (2 to 2·25 grammes in 100 c.c.); prepared with Ipecacuanha Root, Calcium Hydroxide, and Alcohol (90 p.c.).

**Dose.**—As an expectorant,  $\frac{1}{2}$  to 2 minims = 0·03 to 0·12 c.c.; as an emetic, 15 to 20 minims = 0·9 to 1·2 c.c.

Swiss, maximum single dose, 0·05 gramme; maximum daily dose, 0·25 gramme.

Official in Swed., Swiss and U.S., 1 in 1; Belg. and Span. have solid extract.

**PILULA IPECACUANHÆ CUM SCILLA.** PILL OF IPECACUANHA WITH SQUILL.

Compound Powder of Ipecacuanha, 3; Squill, in powder, 1; Ammoniacum, in powder, 1; Syrup of Glucose, *q.s.*  
(about 1 of Opium in 20)

Now made with Syrup of Glucose in place of Treacle.

**Dose.**—4 to 8 grains = 0·26 to 0·52 gramme.

Official in Port., similar to Brit.

A corresponding preparation, Pilula Ipecacuanhæ cum Urginea, is Official in the *Ind.* and *Col. Add.*, for India and the Eastern Colonies.

**PULVIS IPECACUANHÆ COMPOSITUS.** COMPOUND POWDER OF IPECACUANHA. *B.P. Syn.*—DOVER'S POWDER.

Ipecacuanha Root, 1; Opium, 1; Potassium Sulphate, 8.  
All in powder. (1 Opium, 1 Ipecac. in 10)

**Medicinal Properties.**—An admirable diaphoretic and anodyne; it is also most useful in gastric ulceration, dyspeptic vomiting, dysentery and diarrhoea; in the latter case it is sometimes combined with Calomel. In doses of 3 or 4 grains it will often relieve heartburn, probably by allaying gastric irritability.

**Dose.**—5 to 15 grains = 0·3 to 1 grammie.

*Ph. Ger.* maximum single dose, 1·5 grammie; maximum daily dose, 5·0 grammes.

Official in all the Foreign Pharmacopœias; Austr., Ger., Norw., Russ., Swed. and Swiss, Pulvis Ipecacuanhæ Opiatus; Hung., Pulvis Doveri; Dan., Pulv. Ipecac. Thebaicus; Dutch, Pulvis Opii Compositus; Fr., Poudre d'Ipecacuanha Opiacée; Port., Po de Ipecacuanha Composto; Jap., Pulyis Doweri; and U.S., Pulvis Ipecacuanhæ et Opii, with Milk Sugar; all same strength

as Brit.; Span., Polvo de Ipecacuanha Opiado, 1 Opium, 1 Ipecacuanha, in 11·4; Belg., 9 Extract Opium, 9 Ipecac., in 100; Ital., Polvere del Dower, Opium 1, Ipecacuanha 1, Liquorice Powder 1, Nitre 2, Potassium Sulphate 2; Mex. (Polvo de Dower), Opium 1, Ipecacuanha 1, Nitre 4, Potassium Sulphate 4.

The original Powder of Dr. Dover was prepared by fusing together 4 parts of Potassium Nitrate with 4 of Potassium Sulphate, and reducing the product to fine powder; to this was added 1 of Ipecacuanha, 1 of Opium, and 1 of Liquorice; the French Codex has now made it same strength as British; the Belgian still retains the powdered Extract of Opium instead of Opium itself, which nearly doubles the strength.

**TROCHISCUS IPECACUANHÆ.** IPECACUANHA LOZENGE.

$\frac{1}{4}$  grain of Ipecacuanha in each, with Fruit Basis.

**Dose.**—1 to 3 lozenges.

Official in Belg. and Ital., about  $\frac{1}{4}$  grain; Austr., Dutch, Fr., Jap., Mex., Port., Russ. and Swiss, about  $\frac{1}{6}$  grain; Span., about  $\frac{1}{2}$  grain; U.S., about  $\frac{1}{3}$  grain.

**TROCHISCUS MORPHINÆ ET IPECACUANHÆ.**  
See p. 429.

**VINUM IPECACUANHÆ.** IPECACUANHA WINE.

Liquid Extract of Ipecacuanha, 1; Sherry, 19. (1 in 20)

**Dose.**—As an expectorant, 10 to 30 minims = 0·6 to 1·8 c.c.; as an emetic, 4 to 6 fl. dram. = 14·2 to 21·4 c.c.

Official in Belg., 6 in 100 of Malaga; Dutch, 1 and 10 of Malaga; Ger., Jap., Norw., Russ and Swed., 1 and 10 of Sherry; Port., 1 in 20 of Port; U.S., with fluid Extract, 1 in 10 of Alcohol and White Wine.

**Not Official.**

**SYRUPUS IPECACUANHÆ ACETICUS** (B.P.C.).—Vinegar of Ipecacuanha, 20 fl. oz.; Refined Sugar, 36 oz.

**Dose.**—15 to 120 minims = 0·9 to 7·1 c.c.

**Syrupus Ipecacuanhæ.**—

Austr., Ger. and Hung.—Bruised Ipecacuanha, 1; Alcohol (90 p.c.), 5; Water, 40; digest forty-eight hours, and filter 40; add 60 of Sugar, and dissolve to make 100 of Syrup.

Fr.—Alcoholic Extract of Ipecacuanha, 1; Alcohol (60°), 3; Water, 34; Sugar, 63.

U.S.—Fluid Extract of Ipecacuanha, 7; Acetic Acid, 1; Glycerin, 10; Sugar, 70; Water to 100.

All by weight except U.S.

**TINCTURA IPECACUANHÆ.**—Bruised Ipecacuanha, 1; Alcohol (60 p.c.), 10.

Official in Austr., Dutch and Swiss, 1 in 10; Jap., 1 and 10; Belg., Fr., Hung., Mex., Port. and Span., 1 in 5. All by weight.

U.S. has **Tinctura Ipecacuanhæ et Opii**, 1 of Fl. Ext. Ipecac. and 9 of Deodorised Tincture of Opium.

**EMETINA**,  $C_{15}H_{22}NO_2$  or  $C_{30}H_{44}N_2O_4$ .—A colourless amorphous base present in varying amount in Brazilian, Columbian and Indian Ipecacuanha Root, as given under Ipecacuanha. On exposure to light it rapidly acquires a yellow colour. It is readily soluble in Alcohol, Ether, Chloroform and Benzene; but sparingly in Water.

The chief salts for medicinal purposes are the Hydrochloride and Hydrobromide.

The name 'Emetine' used to be applied to an impure extractive, containing the mixed alkaloids of Ipecacuanha, which is now listed as **Emetine (impure)** or **Emetine (extract)**.

**Emetinæ Hydrobromidum**.—Crystallises from Water in beautiful silky tufts of needles. Although readily soluble in Water, it is much less soluble than the Hydrochloride, difficultly so in Absolute Alcohol or in Chloroform. The commercial salt has the composition  $C_{15}H_{22}NO_2$ , HBr,  $2H_2O$ , and contains 67·95 p.c. of alkaloid. It is rendered anhydrous at 100° C. (212° F.).

**EMETINÆ HYDROCHLORIDUM**.—Crystallises from Water in radiating groups of silky filaments. Very soluble in Water, and in Alcohol. Dried at 100° C. the salt has the composition  $C_{15}H_{22}NO_2HCl$ , and when crystallised from an acid solution  $C_{15}H_{22}NO_2HCl$ ,  $3H_2O$ . Both salts are permanent, undergoing no alteration in colour after being kept for some months.

**Medicinal Properties**.—A powerful emetic and expectorant. In acute catarrhal and febrile conditions, as well as an expectorant, and for all the uses of Ipecacuanha where vomiting is not desired, Emetine in small doses seems likely to prove of considerable value; also as an emetic in larger doses of from  $\frac{1}{6}$  to  $\frac{1}{3}$  grain when a more depressing action is required. The powerful local constricting effect upon blood vessels may also prove useful in hyperæmic and inflammatory conditions. The emetic dose of Emetine is about double that of Cephaeline. Emetine caused a flow of watery mucus from the nasal mucous membrane when a full dose was given; this was not noticed after Cephaeline.—*L.* '95, ii. 1276; *P.J.* '95. ii. 435.

**Dose**.— $\frac{1}{200}$  to  $\frac{1}{50}$  grain = 0·0003 to 0·0013 gramme, as an expectorant;  $\frac{1}{10}$  to  $\frac{1}{3}$  grain = 0·0067 to 0·022 gramme, as an emetic.

**Vinum Emetinæ**.—It is stated in three well known text books that this wine should contain 1 grain of Emetine Hydrochloride in 8 oz. to be equal to **Vinum Ipecacuanhæ B.P.**; but as the latter must contain  $\frac{1}{16}$  p.c. of total alkaloid, the greater part of which is Emetine, the strength should approximate to 3 or 4 grains in 8 oz.

**Cephaeline**.— $C_{14}H_{20}NO_2$  or  $C_{28}H_{40}N_2O_4$ , the alkaloid discovered by Paul and Cownley in both Brazilian and Columbian Ipecacuanha.—*P.J.* (3) xxv. 111.

Colourless, crystallisable, and much less soluble in Ether than Emetine. Like Emetine it is rapidly coloured by exposure to light. Melts at 102° C. It is readily soluble in Alcohol and in caustic alkalis. It forms crystalline salts with acids.

**Cephaeline Hydrochloride.**—Readily soluble in Water. In the dry state it has the formula  $C_{14}H_{20}NO_2HCl$ , but when crystallising from a slightly acid solution, it approximates to  $C_{14}H_{20}NO_2HCl, 3H_2O$  (Paul and Cownley, *P.J.* (3) xxv. 373).

**Medicinal Properties.**—Cephaeline is more powerfully emetic than Emetine, and does not produce depressing effects in doses of  $\frac{1}{2}$  to  $\frac{1}{6}$  grain = 0.005 to 0.01 gramme, but is slow in action.—*L.* '95, ii. 1274.

**PSYCHOTRINE.** — Pale lemon-yellow coloured, well-defined transparent prisms, M.P. 138° C. (280.4° F.). Insoluble in Water, readily soluble in Alcohol or in Chloroform, the solutions becoming dark-coloured on exposure to light, and depositing a dark brown substance.

### Not Official.

#### IRIS.

The Rhizome and Roots of *Iris versicolor*.

**Medicinal Properties.**—The preparations **Iridin** and **Extractum Iridis** are purgative and diuretic. Emetic and cathartic in large doses. Used in biliousness, torpid liver and duodenal dyspepsia.

**IRIDIN.**—A dark brown powder, obtained from Iris.

**Dose.**—1 to 5 grains = 0.065 to 0.32 gramme. Given in pill with Extract of Henbane, but more usually combined also with Euonymin and other cholagogues.

'Diluted Glucose' is a good excipient for Iridin.

It has been known for many years as an eclectic remedy, under the names Iridin and Irisin. An **Extractum Iridis** of pilular consistence prepared with Alcohol (94 p.c.) is Official in U.S., and a powdered extract prepared with Alcohol (60 p.c.) is now included in *B.P.C.* under the name of **Iridin**.

**EXTRACTUM IRIDIS FLUIDUM (U.S.).**—Strength 1 in 1, prepared by percolation with Alcohol (90 p.c.).

### Not Official.

#### ISPAGHULA.

The dried Seeds of *Plantago ovata*.

Demulcent, and mildly astringent. They are given (whole) in protracted diarrhoea in India. In their passage through the alimentary canal they absorb Water, swell up and yield a bland

mucilage. Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

**Dose.**—50 to 150 grains = 3·2 to 10 grammes.

A Decoction Ispaghulæ (1 in 180), dose,  $\frac{1}{2}$  to 2 fl. oz. = 14·2 to 56·8 c.c., is Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

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## JABORANDI FOLIA.

### JABORANDI LEAVES.

The dried Leaflets of *Pilocarpus Jaborandi*.

The Jaborandi Leaves of commerce have been very variable, and the produce of different varieties of Jaborandi.

The principal alkaloid is Pilocarpine, a syrupy liquid, forming crystalline salts, of which the Hydrochloride and Nitrate are most used, see p. 479. They also contain Iso-pilocarpine, which possesses similar but weaker properties.

It is stated in some text books that an alkaloid Jaborine which resembles Atropine in its physiological action is also present, but Jowett (*B.M.J.* '00, ii. 1074) states that after a careful search no trace of any such substance was discovered.

**Medicinal Properties.**—Powerful and prompt diaphoretic, sialagogue, and galactagogue. Useful in the dropsy, uræmia and thirst of Bright's disease. It is antagonistic in its action to Belladonna. The salts of Pilocarpine are more generally used than the galenical preparations of Jaborandi. See also Pilocarpinæ Nitratas.

**Official Preparations.**—Extractum Jaborandi Liquidum and Tinctura Jaborandi. Used in the preparation of Pilocarpinæ Nitratas.

**Official in Belg., Dutch Supp., Fr., Ger., Ital., Jap., Mex., Port., Span. and Swiss; U.S. (Pilocarpus).**

### EXTRACTUM JABORANDI LIQUIDUM. LIQUID EXTRACT OF JABORANDI.

20 of Jaborandi Leaves, in No. 20 powder, percolated with Alcohol (45 p.c.), until 67 volumes have been obtained. Reserve the first 17 and evaporate the remainder to a soft extract, which is dissolved in the first portion and made up with Alcohol (45 p.c.) to 20. (1 in 1)

**Dose.**—5 to 15 minims = 0·3 to 0·9 c.c.

**Official in U.S., Extractum Pilocarpi Fluidum 1 in 1; Belg. and Fr. have a Solid Extract,** which was also Official in B.P. '85.

### TINCTURA JABORANDI. TINCTURE OF JABORANDI.

4 Jaborandi Leaves, in No. 40 powder, percolated with Alcohol (45 p.c.), to yield 20.

Now 1 in 5 instead of 1 in 4.

**Dose.**—30 to 60 minims = 1·8 to 3·6 c.c.

**Official in** Belg., Fr. and Span., 1 and 5; Mex., 1 in 5.

Wright and Farr (*P.J.* (3) xxii. 1) show an enormous variation in the strength of various samples of this tincture, viz. from 0·032 to 0·148 p.c. of alkaloid, and recommend a standard of 0·1 p.c.

**PILOCARPINÆ NITRAS.** See p. 479.

### JALAPA.

#### JALAP.

The dried Tubercles of *Ipomoea Purga*.

It contains, as its principal ingredient, a glucoside **Convolvulin**, soluble in Alcohol but insoluble in Ether, and constituting all but a small part of Resina Jalapæ B.P.

**Medicinal Properties.**—A brisk cathartic, operating sometimes painfully, producing copious watery discharges. From its hydragogue powers, it is especially serviceable in dropsy and cerebral congestion, when it is usually prescribed in the form of the Compound Powder; as a vermifuge it is an ingredient of Pulvis Scammonii Compositus.

**Dose.**—5 to 20 grains = 0·32 to 1·3 grammes.

Swiss, maximum single dose, 1·0 gramme; maximum daily dose, 5·0 grammes.

**Prescribing Notes.**—*The powder can be given in cachets, or mixed with Confections. The Resin is given in pills made by adding 'Diluted Glucose,' q.s.*

**Official Preparations.**—Extractum Jalapæ, Pulvis Jalapæ Compositus, Jalapæ Resina, Tinctura Jalapæ; used in the preparation of Pulvis Scammonii Compositus. The resin is contained in Pilula Scammonii Composita.

**Not Official.**—Pilula Jalapæ, Sapo Jalapinus, Jalapin.

**Official in** Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.

The Fr. Codex (1884) fixed the standard at 16 to 18 p.c. of Resin; U.S. (1880 and 1890) at 12 p.c.; Ger. (1890) lowered the figure to 7 p.c., but (1901) increased it again to 'at least 9 p.c.'

### EXTRACTUM JALAPÆ. EXTRACT OF JALAP.

Jalap, in coarse powder, 1; Alcohol (90 p.c.), 5; Distilled Water, 10. A solid Extract prepared by treating the Jalap first with the Alcohol and subsequently with the Water, and combining the two residues into one Extract.

100 lb. of Jalap yielded 50 lb. of Extract.

**Dose.**—2 to 8 grains = 0·13 to 0·32 grammes.

**Official in** Jap. and U.S.

**PULVIS JALAPÆ COMPOSITUS.** COMPOUND POWDER OF JALAP.

Jalap, 5 ; Acid Potassium Tartrate, 9 ; Ginger, 1. (1 in 3)

**Dose.**—20 to 60 grains = 1·3 to 4 grammes.

Official in Russ., Jalap 1, Potassium Bitartrate 2; Span., Jalap 1, Cream of Tartar 1, Magnesia 1; U.S., Jalap 35, Potassium Bitartrate 65; Mex., contains 6 ingredients.

**JALAPÆ RESINA.** JALAP RESIN.

Extracted from Jalap by exhausting with Alcohol (90 p.c.), and purified by washing with Water.

**Dose.**—2 to 5 grains = 0·13 to 0·32 gramme.

Ital., maximum single dose, 0·3 gramme; maximum daily dose, 1·0 gramme.

Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.

**TINCTURA JALAPÆ.** TINCTURE OF JALAP.

A Tincture obtained by treating Jalap with Alcohol (90 p.c.), and standardising it to contain 1·5 of the Resin in 100 c.c., which is equal to 1 of Root in 6 or 7 of Alcohol (90 p.c.).

**Dose.**— $\frac{1}{2}$  to 1 fl. drm. = 1·8 to 3·6 c.c.

Official in Belg., Fr. and Port., 1 and 5 by weight; Mex., 1 in 5. Belg., Fr., Port. and Swiss have a Compound Tincture.

**TINCTURA JALAPÆ COMPOSITA.**—Jalap, 8; Scammony, 2; Turpeth,\* 1; Alcohol (60 p.c.) to 100.

**Dose.**— $\frac{1}{2}$  to 1 fl. drm. = 1·8 to 3·6 c.c.

Official in the Ind. and Col. Add. for India, the Eastern Colonies and North American Colonies.

**Not Official.**

**PILULA JALAPÆ (Ger.)**—Jalap Soap, 3; Powdered Jalap, 1.

**SAPO JALAPINUS (Ger.)**—Resin of Jalap, 1; Soap, 1.

**JALAPIN.**—A purified Resin of Jalap, entirely soluble in Ether.

**Dose.**—1 to 5 grains = 0·06 to 0·32 gramme.

Tampico Jalap from *Ipomoea simulans*, and Orizaba root (Woody Jalap), from *Ipomoea Orizabensis*, also yield a glucoside Jalapin, soluble in Ether, and almost, if not completely, identical with Resina Scammonii B.P. from *Convolvulus Scammonia*.

It is unfortunate that the name Jalapin should have been applied to the resin of spurious Jalap, which is identical with the

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\* Turpeth is the dried root and stem of *Ipomoea Turpethum* and is Official in the Ind. and Col. Add. for India and the Eastern and North American Colonies.

true Resin of Scammony, and which is quite distinct from the Official Resin of Jalap.

During 1892, attention was again called to this misleading nomenclature (*P.J.* (3) xxii. 888), and considerable correspondence ensued. It appears that it has been customary in this country to apply the term 'Jalapin' to the true Jalap Resin, but the article imported from Germany under that name is invariably the Ether-soluble Resin from spurious Jalap or Scammony. Several suggestions were made, but none which seemed at all likely to be acceptable both in Britain and Germany. The most feasible proposal is that the term 'Scammonin' should be used to designate the Ether-soluble Resin (shown, *P.J.* (3) xxiii. 86, to be identical from either of the previous named sources), and that the earliest opportunity should be taken to make Official, under the name **Jalapin**, an Ether-wholly-insoluble Resin from true Jalap.

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### Not Official.

#### JAMBUL.

The Seeds of *Eugenia Jambolana*, which have been used in India and this country for diabetes.—*P.J.* (3) xviii. 921; *B.M.J.* '91, ii. 1283; *B.M.J.E.* '92, i. 39; *T.G.* '93, 611; *Pr.* li. 138.

The dose should be large, 1 drm. to 1 oz. daily.—*B.M.J.* '91, ii. 1284.

Two cases in which 2 oz. were given daily.—*Pr.* li. 139.

It can also be given in the form of **fluid extract** (1 in 1). Dose, 10 to 60 minims = 0·6 to 3·6 c.c.

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### Not Official.

#### JEQUIRITY.

The Seeds of *Abrus precatorius*.

**Infusum Abri**, 8 of the seeds to 100 of Water at 120° F., has been used in the treatment of granular lids; it sets up a purulent conjunctivitis, varying in intensity with the strength and frequency of the applications. A very strong infusion, 1 to 4, was used by Dr. Shoemaker in the treatment of affections of the skin.—*Med. Bulletin*, Nov. 1884; *L.* '85, ii. 733; *L.M.R.* '86, 126; *T.G.* '87, 640; and *L.M.R.* '86, 541. Dr. Martin's researches show that the determining causes of the inflammation and the toxic properties in general are due to a globulin and an albumose, the activity of which is rapidly destroyed by a moist heat of 85° C. (180° F.).

Ehrlich has shown that the continuous use of Abrin produces tolerance to its toxicity.—*B.M.J.* '97, ii. 705.

**Jequiritol**.—A substance allied to Abrin, supplied in sterile solution, containing 50 p.c. of Glycerin. It possesses, when

applied locally, a distinctly marked curative action on inflamed conjunctiva; when controlled by Jequiritol Serum, it is the best means for the removal of nebulae of the cornea.—*L.* '01, i. 1836.

The root has been used in many hot countries for the same purpose as liquorice-root, hence it is called Indian liquorice, but considering the known poisonous character of the seed, the title is dangerously misleading.

The root and an extract prepared from it are Official in the Pharmacopœia of India.

Official in Dutch Supp.

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### Not Official.

#### JUGLANS.

The Root-bark of *Juglans cinerea* (Butternut), collected in autumn.

A mild cathartic, used in the form of Extractum Juglandis, U.S., prepared with Dilute Alcohol, dose, 5 to 10 grains = 0·32 to 0·65 gramme, and Juglandin, an eclectic remedy, which, in doses of 5 to 10 grains, is used as a mild purgative.

**SPIRITUS NUCIS JUGLANDIS.**—A distilled preparation from the Walnut (*Juglans Regia*).

Aromatic bitter, astringent, vermifuge.

Dose.—1 to 4 fl. dram. = 3·6 to 14·2 c.c.

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#### JUNIPERI OLEUM.

##### OIL OF JUNIPER.

A colourless, or pale yellowish-green, limpid, oily liquid, having a characteristic odour, and balsamic, burning and somewhat bitter taste. It is the Oil distilled from the full-grown unripe green Fruit of *Juniperus communis*.

Sp. gr. 0·860 to 0·880. Messrs. Schimmel state doubly Rectified Oil of Juniper has sp. gr. 0·858.

**Solubility.**—1 in 20 of Alcohol (90 p.c.), but it does not become quite clear; it mixes with equal parts of Absolute Alcohol, but if more Alcohol be added it becomes milky.

**Medicinal Properties.**—Stimulant, carminative, anti-spasmodic, and a stimulating diuretic, the latter property constituting its chief medicinal value. Used in cardiac and hepatic dropsical cases, either alone or combined with other diuretics; should not be used in acute Bright's disease.

Dose.— $\frac{1}{2}$  to 3 minims = 0·03 to 0·15 c.c.

**Official Preparation.**—Spiritus Juniperi; contained in Mistura Creosoti.

**Official in Austr., Belg., Dan., Dutch Supp., Fr. (Genièvre), Ger., Hung., Ital. (Essenza di Ginepro), Jap., Norw., Port. (Esencia de Zimbro), Span. (Esencia de Enebro) Swiss and U.S.**

**SPIRITUS JUNIPERI. SPIRIT OF JUNIPER.**

**Oil of Juniper, 1 ; Alcohol (90 p.c.), q.s. to yield 20. If not bright, filter through Talc. (1 in 20)**

**Dose.**—20 to 60 minims = 1·2 to 3·6 c.c.

It is two and a half times stronger than B.P.'85..

**Official in Fr. and Jap., 1 in 50 ; U.S. 1 in 20 ; Austr., Ger. and Swiss, 1 fruit in 4, by distillation ; Span., 3 fruit in 19, by distillation ; Dutch, Port. and U.S. have a compound spirit. All by weight except U.S.**

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**Not Official.**

**KALADANA.**

*Syn.*—PHARBITIS NIL.

The dried Seeds of *Ipomoea hederacea*. Cathartic, resembling Jalap in action.

Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies, as are also the **Compound powder**, Kaladana, 5 ; Acid Potassium Tartrate, 9 ; Ginger, 1 ; dose, 20 to 60 grains = 1·3 to 4 grammes ; the **Tincture**, 1 of seeds in 5 of Alcohol (70 p.c.) ; dose, 30 to 60 minims = 1·8 to 3·6 c.c. ; and the **Resin** ; dose, 2 to 8 grains = 0·13 to 0·52 gramme.

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**Not Official.**

**KAMALA.**

*Syn.*—GLANDULÆ ROTTLERÆ.

A fine, granular, mobile, brick-red powder, consisting of the minute glands and hairs obtained from the surface of the Fruits of *Mallotus Philippinensis*.

**Solubility.**—Almost insoluble in Water, but about 60 p.c. of a sample (containing 6 p.c. of ash) was soluble in Absolute Alcohol, in Chloroform, and in Ether ; and was for the most part soluble in Liquor Potassæ.

Anthelmintic and purgative. Successfully given in tænia, in doses of 30 to 120 grains = 2 to 8 grammes.

**Prescribing Notes.**—*The powder is usually given suspended in Gruel, Mucilage, Treacle, or Syrup ; or it may be prescribed along with Liq. Ext. of Male Fern. A purgative should follow.*

**Official** in Austr., Dutch, Hung., Jap. (10 p.c. of ash), Ger., Ital., Swed. and Swiss (6 p.c. of ash); Hung. has also Kamala Depuratum; Mex., Port., Russ., U.S. (8 p.c. of ash).

**TINCTURA KAMALÆ.**—Kamala, 1; Alcohol (60 p.c.), 5.

**Dose.**—1 to 2 fl. dram. = 3·6 to 7·1 c.c.

## KAOLINUM.

### KAOLIN.

*N.O.Syn.*—CHINA CLAY; PORCELAIN CLAY.

A native Aluminium Silicate, powdered, and freed from gritty particles by elutriation.

A fine white clay, derived from the decomposition of the felspar of granitic rocks; extensive tracts of it occur in Cornwall. When finely ground and washed it is used as a form of Fuller's Earth.

Has been used in Germany for many years as an **excipient for pills** of the easily reducible salts of metals, such as Gold Chloride, Silver Nitrate, and Potassium Permanganate; but a mixture of Paraffins answers better. See MASSA PARAFFINUM, p. 461. It is also employed for clarifying Wine, Beer, and Syrups.

**Official Preparation.**—Contained in Pilula Phosphori.

**Not Official.**—Unguentum Kaolini and Massa Kaolini.

**Official in Austr., Ger., Hung. and Jap., Bolus Alba; Belg., Argilla; Dan., Norw. and Swed., Kaolinum.** Swiss has Alumina.

### Not Official.

**UNGUENTUM KAOLINI.**—Soft Paraffin, 1; Hard Paraffin, 1: melt, and add Kaolin, 1; stir till cold.

This has been proposed as a basis for pills containing Silver Nitrate or Potassium Permanganate.—*P.J.* (3) xv. 60.

A very great improvement upon it is the following:—

**MASSA KAOLINI.**—Soft Paraffin, 2; Hard Paraffin (m.p. 120° F.), 1; Kaolin, 1. This will make a good mass with three times its weight of Potassium Permanganate.

A mixture of Hard Paraffin (m.p. 120° F.), 1; with Soft Paraffin, 1½; answers even better, and will make a good mass with four times its weight of Permanganate. See MASSA PARAFFINUM, p. 461.

## KAVA-KAVA.

The decorticated, dried and divided Root of *Piper Methysticum*.

Spinal depressant, causing loss of muscular power; diuretic; used in chronic catarrhal conditions of the genito-urinary organs. Used by the inhabitants of the Polynesian Isles in the preparation of an intoxicating liquor.

Official in the *Ind.* and *Col. Add.* for the Australian Colonies.

An Extract, prepared with diluted Alcohol, used as a hypnotic, dose 1 to 5 grains = 0·06 to 0·32 grammes; also a Fluid Extract (1 in 1), dose 15 to 60 minims = 0·9 to 3·6 c.c.

An Extractum Kavæ Liquidum (1 in 1), dose 30 to 60 minims = 1·8 to 3·6 c.c., is Official in the *Ind.* and *Col. Add.* for the Australian Colonies.

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### Not Official.

#### KERATINE.

A substance introduced by Dr. Unna for coating pills which are intended to pass the stomach and act in the small intestine. It is made by digesting horn shavings, first in artificial gastric juice (acidified Pepsin solution) until all the albuminous substances have been dissolved, and treating the residue with Ammonia Solution. The Ammoniacal Solution, when evaporated, yields a gum-like liquid, which can be used for coating pills. The coating, although unaffected by Hydrochloric Acid, is soluble to some extent in Acetic and Citric Acids, which should therefore not be given at the same time.

Official in Dutch Supp. and Ger.

**LIQUOR KERATINI.**—Prepared Keratine, 1; Alcohol (90 p.c.), 5; Strong Solution of Ammonia, 5; mix the Alcohol and Ammonia and dissolve the Keratine.

This makes a good coating, and dries quickly. It is better to give the pills a thin coating of Oil of Theobroma, two coatings of Keratine, and then varnish.

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### KINO.

#### KINO.

The Juice obtained from incisions in the trunk of *Pterocarpus Marsupium*, evaporated to dryness.

Compared with Pale Catechu it is more soluble in Water, and the solution is more astringent.

**Medicinal Properties.**—A powerful astringent. Employed in obstinate diarrhoea and dysentery in form of compound powder or with chalk; also in passive haemorrhage and chronic mucous discharges. Externally, as a styptic, and in powder to indolent ulcers.

**Dose, in powder,** 5 to 20 grains = 0·32 to 1·3 grammes.

**Prescribing Notes.**—Generally given in the form of the compound powder; it may be administered in cachets. The Tincture is useful in gargles and tooth-washes, the Lozenge for throat affections.

**Incompatibles.**—Mineral Acids, Alkalies and Carbonates, Metallic salts and Gelatin.

**Official Preparations.**—*Pulvis Kino Compositus* and *Tinctura Kino*. Contained in *Pulvis Catechu Compositus*.

**Not Official.**—*Trochisci Kino*.

**Official in Belg., Fr., Jap., Port., Span. (Quino), Swiss and U.S.**

**Kino Eucalypti** (dose 5 to 20 grains = 0·32 to 1·3 gramme) is Official in the *Ind.* and *Col. Add.* for the Australian Colonies.

**Butea Gum** (Bengal or Madras Kino), the inspissated juice from the stem of *Butea Frondosa*, is made Official in the *Ind.* and *Col. Add.* for use in place of Kino in India and the Eastern Colonies. It is an astringent. **Butea Seeds** and **Powder** of the same are also included for the same countries.

**Dose.**—10 to 20 grains of the Powder, as an Anthelmintic.

Waring (*Ph. Ind.*) gives the dose as 20 grains three times a day for three days, and a dose of Castor Oil on the fourth day, but its use requires care.

**PULVIS KINO COMPOSITUS.** COMPOUND POWDER OF KINO.

Kino, 15 ; Opium, 1 ; Cinnamon Bark, 4 (1 Opium in 20)  
Keep it in a well closed vessel.

**Dose.**—5 to 20 grains = 0·32 to 1·3 grammes.

**TINCTURA KINO.** TINCTURE OF KINO.

Kino, in powder, 2; Glycerin, 3; Distilled Water, 5; Alcohol (90 p.c.), q.s. to yield 20. (1 in 10)

**Dose.**—½ to 1 fl. dram. = 1·8 to 3·6 c.c.

**Official in Fr. and Swiss,** 1 in 5, by weight; U.S., 1 in 10.

As gelatinisation is probably due to an enzyme, the following formula has been proposed : Kino, 2 oz.; Boiling Water, 10 fl. oz. Add the Kino to the Water in a suitable vessel, and maintain the whole at or near the temperature of 100°C. for fifteen minutes, agitating frequently. Allow to cool, replace the Water lost by evaporation; add Alcohol (90 p.c.) 10 fl. oz. and set aside for twelve hours; then strain.—*P.J.* '03, ii. 702.

**Not Official.**

**TROCHISCI KINO.**—Containing 2 grains in each lozenge, with Black Currant paste.

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**Not Official.**

**KOLA.**

The Seeds of *Cola acuminata*, a tree whose habitat is the Western Coast of Africa, between Sierra Leone and the Congo.

The seeds contain 2 to 2·5 p.c. of Caffeine, to which it owes its virtues, also a glucoside Kolanin. A proprietary article is also sold under this name. Various preparations have been made, i.e. Kola-chocolate, Kola elixir, Kola wafers, Kola wine, also Fluid Extract.

A Tincture of Kola (1 to 5 of Alcohol 60 p.c.) is Official in Fr. Supp.

**EXTRACTUM KOLÆ LIQUIDUM (B.P.C.).**—1 in 1 fluid extract, using Alcohol (60 p.c.).

### KOUSSO. *See CUSSO.*

### KRAMERIÆ RADIX.

KRAMERIA ROOT.

B.P. *Syn.*—RHATANY Root.

The dried Root of Para Rhatany, a species of Krameria, attributed to *Krameria argentea*; or of (2) Peruvian Rhatany, *Krameria triandra*.

**Medicinal Properties.**—A powerful astringent; tonic. Used in chronic diarrhoea; in passive haemorrhages and mucous discharges, as menorrhagia and leucorrhœa; and generally where Tannin and Catechu are beneficial. The infusion is used as a gargle in relaxed sore throat; one teaspoonful of the tincture in a wineglassful of water is an excellent wash for spongy and inflamed gums, or stomatitis due to Mercury. Locally, in form of suppository with Morphine, it is used in prolapsus ani and anal fissure.

**Dose.**—20 to 60 grains = 1·3 to 4 grammes, in powder.

**Incompatibles.**—Alkalies, Lime Water, Iron and Lead salts, Gelatin.

**Official Preparations.**—Extractum Krameriae, Infusum Krameriae, Liquor Krameriae Concentratus, Tinctura Krameriae, Trochiscus Krameriae, and Trochiscus Krameriae et Cocainæ. Contained in Pulvis Catechu Compositus.

**Not Official.**—Extractum Krameriae Fluidum, Gossypium Krameriae, Suppositorium Krameriae, Syrupus Krameriae, and Trochiscus Krameriae et Boracis.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Norw., Russ., Swed. and Swiss, Ratanhia; Mex., Crameria; Hung., Ratanha; Ital., Port. and Span., Ratanaria; U.S., Krameria.**

**EXTRACTUM KRAMERIÆ. EXTRACT OF KRAMERIA.**  
B.P. *Syn.*—**EXTRACT OF RHATANY.**

Prepared from Krameria Root, by exhaustion with Distilled Water and evaporation to dryness.

**Dose.**—5 to 15 grains = 0·32 to 1 grammie.

Official in Austr., Belg., Dan., Dutch, Fr., Mex., Port., Russ., Span. and U.S.; Hung., crude extract purified with warm Water; Ital. (aqueous); Swiss, made with boiling Water; Mex. and U.S. have also a **Fluid Extract**.

**INFUSUM KRAMERIÆ.** INFUSION OF KRAMERIA. *B.P.*  
*Syn.*—INFUSION OF RHATANY.

Krameria Root, bruised, 1; boiling Distilled Water, 20.  
Infuse 15 minutes. (1 in 20)

**Dose.**— $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 c.c.

This Infusion should be freshly prepared, as it deposits when kept.

Official in Fr. and Mex., Tisane, 1 in 50.

**LIQUOR KRAMERIÆ CONCENTRATUS.** CONCENTRATED SOLUTION OF KRAMERIA.

10 of Krameria Root, in No. 40 powder, percolated with Alcohol (20 p.c.), to yield 20. (1 in 2)

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

**TINCTURA KRAMERIÆ.** TINCTURE OF KRAMERIA.  
*B.P. Syn.*—TINCTURE OF RHATANY.

4 Krameria Root, in No. 40 powder, percolated with Alcohol (60 p.c.), to yield 20.

Now 1 in 5 instead of 1 in 8, and Alcohol (60 p.c.) used in place of Rectified Spirit.

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Mex., Norw., Port., Russ., Swed., Swiss and U.S., 1 in 5. All by weight except U.S.

**TROCHISCUS KRAMERIÆ.** KRAMERIA LOZENGE.  
*B.P. Syn.*—RHATANY LOZENGE.

1 grain of Extract of Krameria in each, with Fruit Basis.

Official in U.S.

**TROCHISCUS KRAMERIÆ ET COCAINÆ.** KRAMERIA AND COCAINE LOZENGE. *B.P. Syn.*—RHATANY AND COCAINE LOZENGE.

1 grain of Extract of Krameria and  $\frac{1}{20}$  grain of Cocaine Hydrochloride in each, with Fruit Basis.

Not Official.

**EXTRACTUM KRAMERIÆ FLUIDUM (U.S.).**—Rhatany Root, 1; exhausted with Diluted Alcohol and Glycerin, to yield 1 of fluid extract.

**GOSSYPIUM KRAMERIÆ.**—Tincture of Rhatany,  $\frac{1}{2}$  fl. oz.; Glycerin, 10 minims; mix and with it saturate evenly Cotton Wcol, 60 grains, and dry.

**SUPPOSITORIUM KRAMERIÆ.**—Extract of Rhatany, 8 grains; Morphine Hydrochloride,  $\frac{1}{16}$  grain; Stearin, 10 grains.

Official in Fr. and Span., 1 gramm = 15.5 grains in each.

**SYRUPUS KRAMERIÆ (U.S.).**—Fluid Extract of Krameria, 45; Syrup, 55.

Official in Dutch Supp., Extract 3, Syrup 97; Swiss and Ital., Extract 2, Water 5, Syrup 98, concentrate to 100 by weight.

**TROCHISCUS KRAMERIÆ ET BORACIS.**—Useful for relaxed throat.

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#### Not Official.

#### LACHNANTHES TINCTORIA.

A North American plant, known colloquially as Red Root or Spirit Weed, a native of the United States. A homœopathic remedy recommended for checking the cough of consumptive patients, in the treatment of pneumonia and of typhus fever. It has received most attention as a cure for consumption, but a careful investigation into the chemical and therapeutical properties of an aqueous solution of an extract, specially prepared from the entire plant, showed that doses varying from 1 to 3 c.c. did not exert any inhibitory action on the progress of tuberculosis, but rather seemed to hasten it.—*B.M.J.* '01, ii. 747, 912, 1124, 1868, 1874; '02, i. 59, 101, 113; '02, ii. 146; *L.* '01, ii. 1605; '02, ii. 72; *Pr.* lxvii. 493; *P.J.* '02, i. 103.

Dose.—2 to 10 minims of a 1 in 10 Tincture made with Alcohol (45 p.c.).

A solid and a fluid extract are also known commercially.

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#### Not Official.

#### LACTUCA.

Lettuce is the Flowering Herb of the wild indigenous plant, *Lactuca virosa*.

**Medicinal Properties.**—A sedative in irritable cough, either in the form of Extractum Lactucæ or as Lactucarium.

Dose.—5 to 15 grains = 0.32 to 1 gramm.

**LACTUCARIUM.**—The juice from the incised flower-stalk of *Lactuca virosa* and other species, collected and dried.

Dose.—2 to 6 grains = 0.13 to 0.40 gramm.

Official in Austr., Belg., Dan., Dutch, Fr., Hung., Jap., Mex., Port. and U.S.; Belg. and Fr. use other species also.

**SYRUPUS LACTUCARII.**—Macerate Lactucarium 1, with Petro-

leum Spirit 4, for twenty-four hours, decant the Petroleum Spirit solution, dry the residue, mix it with an equal bulk of clean dry sand, and exhaust with Alcohol (60 p.c.) to 8; evaporate this Tincture to 6, add Water enough to regain the measure of 8, then dissolve in it Sugar 14, and add Water to make 20. (1 in 20)

Dose.—30 to 120 minims = 1·8 to 7·1 c.c.

Official in U.S., 1 of Tincture in 10.

**TINCTURA LACTUCARII.**—Lactucarium, 1; Alcohol (60 p.c.), 10.

Dose.—20 to 60 minims = 1·2 to 3·6 c.c.

Official in U.S., Lactucarium, 1 part, treated with Petroleum Spirit, and then exhausted with a mixture of Alcohol, Glycerin and Water to produce 2 parts.

**TROCHISCI LACTUCÆ.**—Lozenges containing 1 grain Extract Lettuce in each.

### LANOLIN. *See ADEPS LANÆ.*

Not Official.

### LARICIS CORTEX.

#### LARCH BARK.

The Bark of *Larix Europaea*; collected in spring, deprived of its outer portion and dried. It contains a volatile crystallisable acid, **Larixinic Acid**, which sublimes in vapour of water.

**Medicinal Properties.**—Similar to those of Oil of Turpentine. Astringent, gently stimulant, useful in chronic bronchitis to diminish excessive secretion.

**TINCTURA LARICIS.**—Larch Bark, 1; Alcohol (90 p.c.), *q.s.* to make 8. (1 in 8)

Dose.—20 to 30 minims = 1·2 to 1·8 c.c.

**TEREBINTHINA VENETA** or **T. LARICIS** (Venice Turpentine).—A viscid liquid of a yellowish or greenish-yellow colour, obtained from *Larix Europaea*, or *Larix decidua*. It does not readily harden on exposure to air, or when mixed with  $\frac{1}{16}$  of Magnesia. Soluble in Absolute Alcohol. It is much used on the Continent, and in veterinary practice in this country.

Official in Austr., Belg., Dan., Dutch, Fr., Hung., Ital., Norw., Port., Russ., Span., Swed. and Swiss.

### LAUROCERASI FOLIA.

#### CHERRY-LAUREL LEAVES.

The fresh Leaves of *Prunus Laurocerasus*.

Official Preparation.—*Aqua Laurocerasi*.

**Official in Belg., Dutch, Fr. (Laurier Cerise), Ital. (Lauro ceraso), Port. (Loureiro-Cerejeira), and Span.**

Dutch Supp. has an Oleum Laurocerasi.

### AQUA LAUROCERASI. CHERRY-LAUREL WATER.

Fresh Cherry-Laurel Leaves, 16; Water, 50: distil 20, and standardise the distillate to contain  $\frac{1}{10}$  p.c. of Hydrocyanic Acid, HCN.

**NOTE.**—To ascertain if it lost much of its strength by keeping, a sample was taken which contained 0·104 p.c., and placed in a pint bottle about three-quarters full for a month, it then gave 0·094 p.c.; the bottle was then kept for a week with only 3 oz. in it, and then gave 0·093 p.c.; the same was then kept three days with the cork out, and then gave 0·088 p.c.

It would appear, therefore, that when kept in a closed vessel, the preparation is stable; but, notwithstanding this, commercial samples will be found sometimes as low as half the Official strength.

**Medicinal Properties.**—Nervine sedative. Similar to Hydrocyanic Acid, but without the nauseous odour of the Acid. Used as a lotion to allay itching in cutaneous diseases; also as an adjunct to eye lotions (1 or 2 in 16).

**Dose.**— $\frac{1}{2}$  to 2 fl. dram. = 1·8 to 7·1 c.c.

20 minimis = 1 minim Diluted Hydrocyanic Acid.

**Incompatibles.**—Same as Hydrocyanic Acid.

**Antidotes.**—In case of overdose, the antidotes should be as directed under 'Acidum Hydrocyanicum Dilutum,' p. 33.

**Official in Austr., Dutch, Ital. and Swiss,** 1·0 HCN per 1000; Belg., 0·5 per 1000; Fr., 0·55 to 0·7 per 1000; Span., 0·833 per 1000; Port., Leaves, 1 in 2, not standardised.

### LAVANDULÆ OLEUM.

#### OIL OF LAVENDER.

A pale yellow, or yellowish-green, oily liquid, sp. gr. 0·885; having a pleasant characteristic odour, and an aromatic and somewhat bitter taste. It is the Oil distilled from the Flowers of *Lavandula vera*.

The principal constituents are an alcohol **Linalool**,  $C_{10}H_{18}O$ , identical with that obtained from *Lignum Aloes*, and its Acetic Ester (Linalyl Acetate) which also forms the principal constituent of Oil of Bergamot.

It is sometimes adulterated with foreign Oil from *L. vera*, and the foreign Oil is frequently adulterated with Oil of Spike from *L. spica*. The flavour is stated to be improved by keeping for a year after distillation, and then mixing with an equal volume of Absolute Alcohol.

**Solubility.**—In all proportions of Alcohol (90 p.c.) and Absolute Alcohol; sparingly soluble in Alcohol (60 p.c.).

**Medicinal Properties.**—An aromatic stimulant and carminative. Useful in flatulence and colic.

**Dose.**— $\frac{1}{2}$  to 3 minims = 0·03 to 0·12 c.c.

**Prescribing Notes.**—*The oil is rarely given alone, it is used as an adjuvant to other medicines. Small doses of the spirit are given on Sugar. The Compound Tincture is a popular colouring for mixtures.*

**Official Preparations.**—Of the Oil, Spiritus Lavandilæ, and Tinctura Lavandulæ Composita. Contained in Linimentum Camphoræ Ammoniatum. The Compound Tincture is contained in Liquor Arsenicalis.

**Official** in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Norw., Port., Russ., Span., Swed., Swiss and U.S.

### SPIRITUS LAVANDULÆ. SPIRIT OF LAVENDER.

Oil of Lavender, 1; Alcohol (90 p.c.), q.s. to yield 10.

Now 1 in 10 instead of 1 in 50.

**Dose.**—5 to 20 minims = 0·3 to 1·2 c.c.

It is 5 times stronger than B.P. '85.

**Official** in Belg., Dutch and Russ., 1 in 100; Dan. and Swed., 2 in 100; Jap., 3 in 100; U.S., 5 in 100; all with the Oil, and all by weight except U.S. Austr., Ger. (1 in 4), Ital., Port. and Swiss, from the flowers.

### TINCTURA LAVANDULÆ COMPOSITA. COMPOUND TINCTURE OF LAVENDER.

Oil of Lavender, 45 minims; Oil of Rosemary, 5 minims; Cinnamon Bark, bruised, 75 grains; Nutmeg, bruised, 75 grains; Red Sanders Wood, 150 grains; Alcohol (90 p.c.), 20 fl. oz. By maceration, adding the Oils at the finish.

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

**Official** in Jap. and Swed., similar to Brit.; U.S., similar to Brit. but stronger; Dan. (Tinct. Lavand. Rubr.), differs considerably from Brit.

### Not Official.

#### LEPTANDRA.

#### CULVERS ROOT.

The Rhizome and Rootlets of *Veronica Virginica*.

A cathartic, and stimulates the secretion of bile.

An Alcoholic Extract, dose 2 to 4 grains = 0·13 to 0·26 grammes, and Fluid Extract (1 in 1), dose 20 to 60 minims = 1·2 to 3·6 c.c., are both Official in U.S.

**Leptandrin.**—An eclectic remedy, used as an alterative,  $\frac{1}{4}$  to  $\frac{1}{2}$  grain = 0.016 to 0.032 grammes; as a purgative, 2 to 4 grains = 0.13 to 0.26 grammes.

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## LIMONIS CORTEX.

### LEMON PEEL.

The fresh outer part of the pericarp of the Fruit of *Citrus Medica* var. *Limonum*.

Commercially the peel is cut in December, and is more readily obtainable at that time.

*Ind. and Col. Add.* authorises the use of Dried Lemon Peel in India and the Colonies, when Fresh Lemon Peel is not obtainable.

**Medicinal Properties.**—Bitter stomachic and tonic. Added to stomachic medicines. The Oil is stimulant and carminative. Chiefly used, however, to impart flavour to other medicines. Externally, stimulant and rubefacient.

**Official Preparations.**—Of the peel, Oleum Limonis, Syrupus Limonis and Tinctura Limonis. Used in the preparation of Infusum Aurantii Compositum and Infusum Gentianæ Compositum. The oil is contained in Linimentum Potassii Iodidi cum Sapone, Spiritus Ammoniæ Aromaticus, Tinctura Guaiaci Ammoniata and Tinctura Valerianæ Ammoniata.

**Not Official.**—Citral.

**Official in Austr., Belg., Fr. (Citron), Ger., Hung., Ital. (Cedro and Limone), Port. (Limao), Russ., Span., Swiss and U.S.**

### OLEUM LIMONIS. OIL OF LEMON.

The Oil obtained from fresh Lemon Peel. A light yellow liquid with a pleasant odour and an aromatic, mild, somewhat bitter after-taste. Sp. gr. 0.857 to 0.860.

Contains about 90 p.c. of hydrocarbons (mostly Dextro-Limonene). The flavour is chiefly due to an aldehyde, present to the extent of 4 to 8 p.c., and known commercially as Citral.

**Solubility.**—In all proportions of Glacial Acetic Acid and Absolute Alcohol; 1 in 12 of Alcohol (90 p.c.).

Its flavour and aroma suffer much from keeping; it keeps the aroma much better if mixed (when fresh) with 10 p.c. (by measure) of Absolute Alcohol. The presence of Ethylic Alcohol can readily be detected by the diminution in volume of the Oil on shaking with Water. The Oil should evaporate from paper without leaving a stain.

**Dose.**— $\frac{1}{2}$  to 3 minims = 0.03 to 0.18 c.c.

**Official in all the Foreign Pharmacopœias;** Fr., Huile Volatile de Citron; Ger., Oleum Citri; Ital., Essenza di Cedro.

**Oleum Graminis Citrati, Oil of Lemon Grass.** *Syn.*—Indian

**Oil of Verbena.** The Oil distilled from *Andropogon Citratus*, dose  $\frac{1}{2}$  to 3 minims = 0.03 to 0.18 c.c., is Official in the *Ind. and Col. Add.* for India, the Eastern Colonies and the West Indian Colonies.

### SYRUPUS LIMONIS. SYRUP OF LEMON.

Fresh Lemon Peel, in thin slices or grated, 1; Alcohol (90 p.c.), a sufficient quantity; Lemon Juice, 25; Refined Sugar, 38. Macerate the Lemon Peel in  $1\frac{1}{2}$  of the Alcohol for seven days; press; filter; add sufficient of the Alcohol to produce 2. In the Lemon Juice, clarified by subsidence, dissolve the Refined Sugar by the aid of gentle heat. When the resulting syrup is cold, mix with it the 2 of Alcoholic liquid. The product should weigh 65.

(1 of Peel and 25 of Juice in 65)

This makes a turbid syrup. It is not possible to completely clarify by subsidence. It has been suggested to filter the juice through Talc, but this removes not only the turbidity but also some of the flavour. If the juice is heated nearly to 212° F. (100° C.), and strained through flannel before dissolving the sugar, the resulting syrup is bright and clear. It does not filter readily through flannel or paper.

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1.8 to 3.6 c.c.

Official in Austr., Syrupus Citri, Fresh Lemon Juice filtered 10, Sugar 16; Ital., Bruised Peel 2, Sugar 19, Distilled Lemon Water 12; Mex., Jarabe de Limon, Lemon Juice 10, Syrup 100; Port., Xarope de Casca de Limao, Fresh Lemon Peel 1, Boiling Water 35, Sugar 65; Span., Jarabe de Limon, Lemon Juice 5, Sugar 9. For other Pharmacopœias, see Acidum Citricum.

### TINCTURA LIMONIS. TINCTURE OF LEMON.

Macerate 5 of Fresh Lemon Peel with 20 of Alcohol (90 p.c.)

Now 1 in 4 instead of 1 in 8.

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1.8 to 3.6 c.c.

Official in Belg. and Dutch (*Spiritus Citri*), 1 Oil in 100; Fr. (*Alcoolature de Citron*), 1 Fresh Peel to 2 of Alcohol; and (*Teinture d'Essence de Citron*) 1 Oil in 50; Jap. (*Spiritus Citri*), 1 Oil in 10; Mex. (*Alcoholato de Cortezas de Limon*), Fresh Peel 2, Alcohol (80°) 10, Water 2, distil; Span. (*Alcohol de Corteza de Limon*), Peel 1, and Alcohol (80 p.c.) 6, distil; Swiss (*Spiritus Citri*), Fresh Peel, with Alcohol, and Water; all by weight. U.S. (*Spiritus Limonis*), Oil of Lemon 5, Lemon Peel 5, Deodorized Alcohol to measure 100.

**Not Official.**

**CITRAL. GERANIAL.**—A pale, yellow, mobile, optically inactive Oil, consisting of the high boiling point fractions from the dis-

tillation of Lemon Oil, having a penetrating lemon odour, and possessing a flavouring power about 15 times as great as the original Oil.

Sp. gr. 0·895 to 0·899 ; boiling point, 228° to 229° C.

It has the formula  $C_{10}H_{16}O$ , gives the aldehyde reactions with Bisulphites, and on reduction yields the alcohol **Geraniol**.

It may be used to increase the flavour of Oil of Lemon, by mixing it with the latter in the proportion of 1 to 14.

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## LIMONIS CORTEX SICCATUS.—*See* p. 396.

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### LIMONIS SUCCUS.

#### LEMON JUICE.

The freshly expressed Juice of the ripe Fruit of *Citrus Medica* var. *Limonum*. Contains 30 to 40 grains of Citric Acid to the fl. oz.

Lemon Juice is extremely liable to fermentation, and requires the addition of Alcohol to keep it ; about 15 p.c. of Proof Spirit is sufficient.

**Medicinal Properties.**—Refrigerant ; when diluted, a particularly useful beverage in prevention and treatment of scurvy ; relieves thirst in febrile and inflammatory affections. In acute rheumatism,  $\frac{1}{2}$  to 1 pint = 284 to 568 c.c. daily.

**Dose.**—1 to 2 fl. oz. = 28·4 to 56·8 c.c.

**Official Preparation.**—Syrupus Limonis. Used in the preparation of Acidum Citricum.

**Official in Dutch Supp.** (Succus Citri Artificialis) Citric Acid 1, Water 8, Spirit of Lemon 1; Fr.; Mex., Jugo de Limones; Span., Zumo de Limon; U.S. about 7 p.c. of Citric Acid, 0·5 p.c. of ash; Swiss) Succus Citrifacticus) Citric Acid 10, Water 89, Spirit of Lemon 1.

**ACIDUM CITRICUM.**—*See* ACIDUM CITRICUM.

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### LINUM.

#### LINSEED.

The dried ripe Seeds of *Linum usitatissimum*.

The envelope or testa abounds in a peculiar gummy matter or mucilage, readily imparted to hot Water.

**Medicinal Properties.**—Demulcent. Employed in faacial, pharyngeal and bronchial catarrh, dysentery, diarrhoea,

and inflammatory affections of the urinary passages. In the form of Linseed Poultice it is applied to inflamed parts.

**Official Preparations.**—Linum Contusum and Oleum Lini.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

#### **LINUM CONTUSUM. CRUSHED LINSEED.**

Linseed reduced to a coarse powder.

**Not Official.**—Cataplasma Lini.

**Official in Belg., Fr. and Ital.,** should contain 30 p.c. of oil; U.S., not less than 25 p.c. of oil.

#### **OLEUM LINI. LINSEED OIL.**

A colourless, but more usually pale yellow, oily liquid, possessing a characteristic odour and unpleasant taste. It is a drying Oil, and tends to thicken and darken in colour on exposure to light and air. It is the Oil expressed from Linseed at ordinary temperatures. Sp. gr. 0·930 to 0·940.

For medicinal purposes it should be procured as fresh as possible.

**Solubility.**—Of a freshly expressed sample, 1 in 40 of Absolute Alcohol; 1 in  $1\frac{1}{4}$  of Ether.

**Medicinal Properties.**—Laxative; it also acts mechanically as an enema for removing impacted faeces. A good application to burns in the form of Carron Oil, *see p. 153.*

**Official in all the Foreign Pharmacopœias except Austr. and Mex.; Hung. also Oleum Lini Lotum,**

#### **Not Official.**

**CATAPLASMA LINI.**—Linseed Meal, 4; Boiling Water, 10. Mix the Linseed Meal with the Water gradually, with constant stirring. In cold weather the basin should be previously rinsed with boiling Water.

Applied to inflamed parts.

**Official in Belg., Fr., Port. and Span.**

## **LITHII CARBONAS.**

**LITHIUM CARBONATE.**

$\text{Li}_2\text{CO}_3$ , eq. 73·49.

A white, amorphous, odourless powder, alkaline in reaction. It is obtained from native Lithium Silicates.

**Solubility.**—About 1 in 70 at 60° F.; in hot Water it is only soluble to about half this extent, a solution saturated in the cold becoming quite turbid on boiling. It should be

noticed that using 1 part of Lithium Carbonate to 70 parts of Water solution is very slow, and using these proportions in ounces it requires several weeks' digestion, with frequent shaking, before complete solution is effected.

**Medicinal Properties.**—Diuretic. Combined with Carbonic Acid, in a diluted solution, as in Lithia Water, it has been given in cases of gout with the view of increasing the alkalinity of the blood, and acting as a solvent of the Sodium Biurate deposits.

Luff has shown that the Lithium salts do not exercise any special solvent effect on Sodium Biurate, and that their administration to gouty subjects with the object of removing uratic deposits in the joints and tissues appears to be useless.—*L.* '98, i. 1609.

He also found that Lithium salts, although they did not delay the initial conversion of the gelatinous Sodium Biurate into the crystalline forms, yet when the conversion was once started it was slowed by the presence of these salts and especially by the Lithium Carbonate. For the special purpose referred to, in the treatment of gout the Potassium salts were the most useful, and the Lithium salts ranked next.—*L.* '00, i. 931; *B.M.J.* '00, i. 836.

1 grain of Lithium Carbonate with 1 grain Sodium Arsenate given in aerated Water has been recommended by Martineau in the treatment of diabetes.—*L.* '87, i. 650.

**Dose.**—2 to 5 grains = 0·13 to 0·32 grammes.

**Prescribing Notes.**—*Given in Aërated Water, cachets, or Compressed Tablets. Varalettes are effervescing tablets.*

**Official Preparation.**—Used in the preparation of Lithii Citras.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

**LIQUOR LITHII CARBONATIS** (Lithia Water).—10 fl. oz. of Aerated Water contain 5 grains of Lithium Carbonate.

**LITHII CITRAS.** LITHIUM CITRATE.  $\text{Li}_3\text{C}_6\text{H}_5\text{O}_7 \cdot 4\text{H}_2\text{O}$ , eq. 280·05.

A white, crystalline, deliquescent powder, possessing a cool, slightly alkaline taste.

It is prepared by saturating Citric Acid with Lithium Carbonate.

**Solubility.**—1 in 2 of Water; almost insoluble in Alcohol (90 p.c.).

The solubility in Water is variously given as 1 in 5 to 1 in 25.

**Medicinal Properties.**—Similar to those of the Carbonate, but the Citrate being more soluble, it is better adapted for fluid administration.

**Dose.**—5 to 10 grains = 0·32 to 0·65 grammes.

**Prescribing Notes.**—Generally given in solution, or in the form of *Lithii Citras Effervescentes*.

**Official Preparation.**—*Lithii Citras Effervescentes*.

**Official in Dutch Supp., Fr., Mex. and U.S.**

**LITHII CITRAS EFFERVESCENTES. EFFERVESCENT  
LITHIUM CITRATE.**

Sodium Bicarbonate, in powder, 58; Tartaric Acid, in powder, 31; Citric Acid, in powder, 21; Lithium Citrate, 5: make into granules. (1 in 20)

**Dose.**—60 to 120 grains = 4 to 8 grammes.

**Official in U.S.**

**Not Official.**

**LITHIUM (Li, eq. 6·97).**—A silver-white, brilliant, ductile metal, having the density of 0·59. It is obtained from several minerals—Petalite, Lepidolite, Triphane, and formerly from Triphylline.

Lithium salts are characterized by communicating a crimson colour to a Bunsen flame.

**LITHII BENZOAS (Li C<sub>7</sub>H<sub>5</sub>O<sub>2</sub>, eq. 127·10).**—A white powder, or small shining scales, with a faintly acid reaction; the taste is sweet and somewhat saline. It can be prepared by boiling, in Water, 3 of Lithium Carbonate with 9 of Benzoic Acid, and evaporating.

**Solubility.**—1 in 14 of Water; 1 in 15 of Alcohol (90 p.c.).

These figures were obtained from a re-crystallised salt.

**Medicinal Properties.**—Antilithic. A remedy for gout.

**Dose.**—15 to 30 grains = 1 to 2 grammes.

**Official in Fr., Ital., Mex. and U.S.**

**LITHII BROMIDUM (Li Br, eq. 86·32).**—A white, granular, deliquescent salt.

**Solubility.**—1 in 1 of Water; 1 in 4 of Alcohol (90 p.c.).

**Medicinal Properties.**—Owing to the low atomic weight of Lithium, this salt contains more Bromide than either Potassium or Sodium Bromide, and consequently has been recommended as a hypnotic for gouty patients, and in epilepsy.

In the insomnia of neurasthenia (30 grains three times a day).—*Pr. li.* 351. In Bright's disease.—*L.* '95, ii. 685. In gouty cases of aural vertigo, especially when preceded by a mercurial purge.—*M.A.* '95, 221.

**Dose.**—5 to 15 grains = 0·32 to 1 grammes.

**Official in Fr., Mex., Russ. and U.S.**

**LITHII GUAIACAS.**—Is prepared by digesting pure Guaiacum Resin in an aqueous solution of Lithium Oxide, decanting the clear solution, evaporating and scaling it. Composed of Lithium Oxide, 1; Guaiacum Resin, 3.

Given for chronic gout and some forms of rheumatism.

**Dose.**—5 grains = 0·32 grammes, twice a day; made into a pill with Dispensing Syrup.

**LITHII HIPPURAS.**—A white micro-crystalline powder, soluble 1 in  $2\frac{1}{2}$  of Water. It has been used as a solvent for Uric Acid deposits.

**Dose.**—5 to 15 grains = 0·32 to 1 grammes.

**LITHII QUINAS** (Lithium Kinate. Urosine).—A whitish or brownish-white, granular, effervescent powder, or in the form of tablets. A 50 p.c. solution is also supplied for dispensing. Has been employed as a solvent for Uric Acid deposits in the treatment of gouty affections.—*B.M.J.* '99, i. 1470; '01, ii. 478; *L.* '99, i. 1722; *P.J.* '00, i. 57.

**Dose.**—5 to 15 grains = 0·32 to 1 grammes.

**LITHII SALICYLAS.**—A deliquescent, white or greyish-white powder, with a faintly acid reaction.

Should be kept in well-stoppered bottles.

**Solubility.**—4 in 3 of Water; 1 in 2 of Alcohol (90 p.c.).

**Medicinal Properties.**—A remedy for gout and rheumatism. Is much better than Sodium Salicylate in chronic articular rheumatism.—*B.M.J.* '86, i. 38; '87, i. 695.

**Dose.**—10 to 30 grains = 0·65 to 2 grammes.

**Official in Dutch Supp., Fr., Ger., Mex., Swiss and U.S.**

**LITHII BITARTRAS** (Lithium Acid Tartrate).—A white, odourless, crystalline powder, readily soluble in Water. It has been used in gouty affections.

**Dose.**—5 to 15 grains = 0·32 to 1 grammes.

**LITHII THEOBROMINÆ SALICYLAS** (Lithium Diuretin, Urophenin, Urophenin Salicylate).—A white, odourless powder, readily soluble in Water. Used as a diuretic.

**Dose.**—15 to 20 grains = 1 to 1·3 grammes.

**Uricedin.**—A yellowish-brown, granular powder, containing principally Sodium Citrate, Lithium Citrate and Sodium Sulphate.

## LOBELIA.

### LOBELIA.

The dried flowering Herb of *Lobelia inflata*.

Imported from North America.

It contains a non-volatile poisonous alkaloid, Lobeline, a volatile Oil, a fixed Oil, and a Stearoptene called 'Inflatine'; the alkaloid is a powerful emetic.

**Medicinal Properties.**—In small doses it is depressant, antispasmodic, diaphoretic, diuretic and expectorant. More freely used, it is cathartic and emetic; but as an emetic it is too distressing as well as too hazardous for general use, as it

has a powerful effect on the respiration, and may cause death. It is chiefly used in spasmodic asthma, also in laryngeal and bronchial catarrh with thick and scanty secretion, severe croup, and for the paroxysmal dyspnoea of chronic bronchitis and of whooping-cough. In some cases a useful adjunct to diuretics. Its action in asthma is promoted by the addition of Bromide or Iodide.

*Ph. Ger.* maximum single dose, 0·1 grammie; maximum daily dose, 0·3 grammie.

**Official Preparation.**—Tinctura Lobeliae Ætherea.

**Not Official.—Tinctura Lobeliæ.**

**Antidotes.**—In case of poisoning by Lobelia, the most active stimulants should be employed, as well as the stomach-tube. Recumbent position imperative.

Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Swed., Swiss and U.S.

In the Tincture or an aqueous solution of the drug, the alkaloid is destroyed by heat. When evaporation is required the solution must be acidified (*P.J.* (3) xvii. 1037; (3) xviii. 135); but Wright and Farr repeatedly exposed their pure alkaloidal residue to 100° C. without loss of weight, and it continued to give the usual alkaloidal reactions.—*C.D.* '93, i. 454.

**TINCTURA LOBELIÆ ÆTHEREA.**    **ETHEREAL  
TINCTURE OF LOBELIA.**

4 of Lobelia, percolated with Spirit of Ether to yield 20.

Now 1 in 5 instead of 1 in 8.

**Dose.**—5 to 15 minims = 0.3 to 0.9 c.c.

Official in Mex., 1 and 5.

Not Official.

TINCTURA LOBELIAE.—1 of Lobelia, percolated with Alcohol (60 p.c.) to yield 8. (1 in 8)

**Dose.**—10 to 30 minimis = 0·6 to 1·8 c.c.; but 1 fl. drm. = 3·6 c.c. may be given for asthmatic dyspnœa; repeated every 15 minutes until nausea is produced.

*Ph. Ger.* maximum single dose, 1 gramme; maximum daily dose, 3 grammes of the 1 in 10 Tincture.

*B.P.* '85, but omitted in '98; now included in *B.P.C.*

Official in Austr., Dan., Dutch, Ger., Ital., Jap., Norw., Swed and Swiss, 1 in 10; Belg., Fr., Hung., Mex., Port. and U.S., 1 in 5; all by weight except U.S.

**LUPULUS.****HOPS.***B.P. Syn.—HUMULUS.*

The dried Strobiles of *Humulus Lupulus* collected from cultivated Plants.

The ethereal extract obtained from Hop varies from 9 to 15 p.c., and consists of Oil, Resin, and bitter principle.

**Medicinal Properties.**—Tonic, stomachic, sedative, and moderately narcotic. It allays irritation of the genito-urinary organs. Has been recommended in the treatment of alcoholism. It sometimes produces sleep when opiates are objectionable. Hops may be used topically as fomentation or poultice, as a resolvent or discutient in painful inflammatory swellings; and for colic and other internal pains. Hop (which has been carefully dried and preserved) is made into a pillow, to induce sleep.

**Incompatibles.**—Mineral acids, metallic salts.

**Official Preparations.**—Infusum Lupuli and Tinctura Lupuli. *See also* Lupulinum.

**Not Official.**—Extractum Lupuli.

**Official in Belg., Fr. (Houblon), Mex., Port., Span., Swiss and U.S.**

**INFUSUM LUPULLI. INFUSION OF HOPS.**

Hops, freshly broken, 1; Distilled Water, boiling, 20; infuse 15 minutes; strain. (1 in 20)

**Dose.**—1 to 2 fl. oz. = 28·4 to 56·8 c.c.

**Official in Fr. and Mex.,** 1 in 100.

**TINCTURA LUPULLI. TINCTURE OF HOPS. N.O. *Syn.*—TINCTURA HUMULI.**

4 of Hops, macerated with 20 of Alcohol (60 p.c.).

Now 1 in 5 instead of 1 in 8.

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

**Official in Belg., Mex. and U.S.,** 1 in 5.

**LUPULINUM. LUPULIN.**

Glands obtained from the Strobiles of *Humulus Lupulus*. Should not yield more than 12 p.c. of ash (B.P.), 10 p.c. U.S.P.

**Medicinal Properties.**—Aromatic, tonic, sedative, feebly hypnotic, and anaphrodisiac. It allays irritability of the bladder.

**Dose.**—2 to 5 grains = 0·13 to 0·32 grammes.

**Prescribing Notes.**—*Given in cachets or pills. A good pill can be made by means of Alcohol (90 p.c.) q.s.*

**Not Official.**—Extractum Lupulini, Extractum Lupulini Fluidum, Oleoresina Lupulini and Tinctura Lupulini.

**Official in Austr., Belg., Dan., Dutch, Fr., Hung., Ital., Jap., Port., Span., Swiss and U.S.**

### Not Official.

**EXTRACTUM LUPULI.**—Hops extracted with Alcohol and Water by a process similar to that of Extractum Jalapæ.

16 oz. Hops yield 4 to 5 oz. Extract.

**Dose.**—5 to 15 grains = 0·32 to 1 grammme.

**Official in Belg., Fr., Mex., Port. and Span.** which have alcoholic Extracts, but not made the same way; U.S. has a **Fluid Extract** from Lupulin.

**EXTRACTUM LUPULINI.**—Lupulin exhausted with Alcohol 90 p.c. yields about 50 p.c. of Extract.

**Dose.**—1 to 5 grains = 0·065 to 0·32 grammme.

**EXTRACTUM LUPULINI FLUIDUM (U.S.).**—Prepared with Alcohol (sp. gr. 0·820), so that 1 fl. oz. represents 1 oz. of Lupulin.

**Dose.**—10 to 15 minims = 0·6 to 0·9 c.c.

**OLEORESINA LUPULINI (U.S.).**—Exhaust Lupulin with Stronger Ether; distil off most of the Ether on a water-bath, and complete by exposure to the air.

**Dose.**—1 to 5 grains = 0·065 to 0·32 grammme.

**TINCTURA LUPULINI.**—Lupulin, 1; Alcohol (90 p.c.) q.s. to yield 8.

**Dose.**—15 to 60 minims = 0·9 to 3·6 c.c.

**Official in Dutch Supp.**

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### Not Official.

#### LYCOPODIUM.

The Spores of *Lycopodium clavatum* and other species of *Lycopodium*; a fine powder, pale yellowish, very mobile, inodorous, tasteless, floating upon Water and not wetted by it, but sinking on being boiled with it, and burning quickly when thrown into a flame.

It has been used in dispensing chiefly as powder to envelop hygroscopic pills.

Recommended for incontinence of urine, and irritability of Bladder, in the form of **Tincture** (1 in 10 of Alcohol 90 p.c.); dose, 15 to 60 minims = 0·9 to 3·6 c.c. As a dusting powder for eczema, and to prevent chafing of skin.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

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Not Official.

**MAGNESIUM.**

MAGNESIUM.

**Mg**, eq. 24·18.

Magnesium, the metallic base of Magnesian salts, does not occur naturally; it is a product of manufacture. When set on fire it produces a powerful actinic light, and is used by photographers on this account.

It is a brilliant grey metal (sp. gr. 1·750), slightly resembling Silver, malleable, fusible at a low temperature, and convertible into Magnesia by the combined action of air and moisture.

**MAGNESIA LEVIS.**

LIGHT MAGNESIA.

**MgO**, eq. 40·06.

*B.P.Syn.*—LIGHT CALCINED MAGNESIA; LIGHT MAGNESIUM OXIDE.

An extremely light, white, inodorous powder, possessing a faintly alkaline taste; prepared from light Magnesium Carbonate by ignition at a dull red heat.

**Medicinal Properties.**—Same as Magnesia Ponderosa.

**Dose.**—5 to 30 grains = 0·32 to 2 grammes, for repeated administration; for a single administration, 30 to 60 grains = 2 to 4 grammes.

**Prescribing Notes.**—*In cachets or mixtures, also taken in Milk.*

**Official Preparation.**—Contained in Pulvis Rhei Compositus.

Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.

**MAGNESIA PONDEROSA.**

HEAVY MAGNESIA.

**MgO**, eq. 40·06.

*B.P.Syn.*—HEAVY CALCINED MAGNESIA; HEAVY MAGNESIUM OXIDE.

A fine, white powder, prepared by exposing heavy Magnesium Carbonate to a dull red heat; it is specifically heavier than the above.

**Solubility.**—1 in about 6000 of cold Water, 1 in about

36,000 of hot Water; like Lime, it is more soluble in cold than in hot Water.

**Medicinal Properties.**—Antacid, laxative, diuretic, and antilithic. Much used in dyspepsia, and to relieve vomiting, heartburn, sick headache, rheumatic and gouty conditions, and other complaints attended with acidity, and in larger doses for constipation. As a laxative, it may often be used with advantage when other medicines occasion nausea; generally combined with other purgatives. It is an excellent and mild purgative for children.

**Prescribing Notes.**—*It frequently becomes aggregated into a solid mass when prescribed in mixtures, especially when given with the Sulphate. Magnesium Carbonate is not open to the same objection.*

*Although the heavy powder is preferred by many for its smoothness, the light powder is said to be quicker in its action.*

**Dose.**—5 to 30 grains = 0·32 to 2 grammes, for repeated administration; for a single administration, 30 to 60 grains = 2 to 4 grammes.

**Incompatibles.**—All acids.

**Official Preparation.**—Permitted in *Pulvis Rhei Compositus*.

Official in Norw., Swed. and U.S.

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## MAGNESII CARBONAS LEVIS.

LIGHT MAGNESIUM CARBONATE.

$3(\text{MgCO}_3), \text{Mg}(\text{H}_2\text{O})_2, 4\text{H}_2\text{O}$ , eq. 380·65.

A very light, white, odourless, micro-crystalline powder.

**Solubility.**—1 in 2500 of cold Water, 1 in 9000 of hot Water.

**Medicinal Properties.**—Same as *Magnesia Ponderosa*.

**Dose.**—5 to 30 grains = 0·32 to 2 grammes, for repeated administration; for a single administration, 30 to 60 grains = 2 to 4 grammes.

**Official Preparation.**—Used to prepare *Magnesia Levis*.

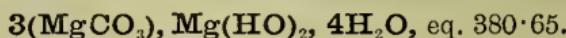
Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Port., Russ., Span., Swed., Swiss and U.S.

One ounce occupies about the space of 6 fl. oz. of Water.

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**MAGNESII CARBONAS PONDEROSUS.**

HEAVY MAGNESIUM CARBONATE.



An odourless, white, granular powder.

**Medicinal Properties.**—Same as Magnesia Ponderosa.**Dose.**—5 to 30 grains = 0·32 to 2 grammes, for repeated administration; for a single administration, 30 to 60 grains = 2 to 4 grammes.**Prescribing Notes.**—*In cachets, lozenges or mixture, or as Liquor Magnesii Carbonatis. Also given with Magnesium Sulphate as Mistura Alba.***Official Preparations.**—Liquor Magnesii Carbonatis. Used in the preparation of Magnesia Ponderosa and Trochiscus Bismuthi Compositus.**Not Official.**—Mistura Alba and Mistura Magnesiæ c. Rheo, Magnesii Bromidi Liquor, Magnesii Citratis Liquor.**LIQUOR MAGNESII CARBONATIS. SOLUTION OF MAGNESIUM CARBONATE.** *B.P. Syn.—FLUID MAGNESIA.*

Contains 10 grains of Magnesium Carbonate in 1 fl. oz. of Carbonic Acid Water.

**Dose.**—1 to 2 fl. oz. = 28·4 to 56·8 c.c.**Official in Belg., Aqua Magnesiæ Aerata; Dutch Supp., Solutio Bicarbonatis Magnesici; Fr., Eau Magnésienne. Swed., Solutio Sulfatis Magnesici Carbonica.****Not Official.****MISTURA ALBA.**—Magnesium Carbonate, 10 grains; Magnesium Sulphate, 1 drm.; Peppermint Water, to 1 fl. oz.—*Given in several Hospital Pharmacopœias.***MISTURA MAGNESIÆ C. RHEO.**—Rhubarb, 5 grains; Magnesium Carbonate, 15 grains; Peppermint Water, 1 fl. oz.**MAGNESII BROMIDI LIQUOR.**—Neutralise 20 fl. oz. of Dilute Hydrobromic Acid (10 p.c.), with about 1 oz. of Magnesium Carbonate; filter. Each teaspoonful contains nearly 7 grains of Anhydrous Magnesium Bromide.**Dose.**—1 to 2 fl. drm. = 3·6 to 7·1 c.c.Has been used as a sedative in treatment of the insane.—*A.J.P. '86, 531.***MAGNESII CITRATIS LIQUOR.**—SOLUTION OF MAGNESIUM CITRATE. *Syn.—LIMONADE PURGATIVE.* Dissolve 200 grains of Citric Acid in 2 fl. oz. of Water, and, having added 100 grains of Magnesium Carbonate, stir until it is dissolved. Filter the solution into a strong half-pint bottle, add  $\frac{1}{2}$  fl. oz. of Syrup of Lemons and sufficient Distilled Water to nearly fill the bottle,

then introduce 40 grains of Potassium Bicarbonate in crystals, and immediately close the bottle with a cork, which should be secured with string or wire; afterwards shake the bottle until the Potassium Bicarbonate is dissolved.

**Medicinal Properties.**—A pleasant saline aperient and refrigerant draught.

**Dose.**—5 to 10 fl. oz. = 142 to 284 c.c.

**Official in U.S. (formula modified), Austr. and Hung.,** Potio Magnesiae Citricæ Effervescens; Belg., Limonada Citratis Magnesiae; Dutch Supp., Solutio Citratis Magnesici; Fr., Limonade Purgative; Ital., Limonata Magnesiaca; Mex., Solucion de Citrato de Magnesia; Port., Limonada Citro-Magnesica; Russ., Potio Magnesii Citrici Aërophora; Spau., Pocion de Citrato Magnesico Gaseosa; Swiss, Magnesium Citricum Effervescens.

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## MAGNESII SULPHAS.

MAGNESIUM SULPHATE.

*B.P. Syn.*—EPSOM SALT.

$\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$ , eq. 244·68.

Small, colourless, odourless, translucent, rhombic prisms or acicular crystals, having a bitter, saline taste.

**Solubility.**—10 in 13 of Water, measures 18; 20 in 3 of boiling Water.

**Medicinal Properties.**—A mild and safe hydragogue purgative, operating with little pain or nausea. Used in portal congestion and chronic constipation and that of lead poisoning, in inflammatory affections in robust people, in dropsies, and in congestion of brain; by reducing blood pressure, it wards off apoplectic attacks; along with Ferrous Sulphate it is given in anaemia. It is an important ingredient in *Mistura Alba*.

When given in conjunction with Diluted Sulphuric Acid the dose may be reduced; it also helps to cover the nauseous taste.

Treatment of tropical dysentery by 60 grain doses of saturated solution of Epsom Salts in conjunction with 10 minims of Diluted Sulphuric Acid, every hour.—*L.* '90, ii. 711; *B.M.J.* '98, i. 554; ii. 877, 887; '99, ii. 1413, 1474; '00, i. 110, 1404; '03, ii. 776; *T.G.* '98, 534; '01, 648; also  $\frac{1}{2}$  fl. oz. doses of saturated solution of Magnesium Sulphate with 15 minims of Diluted Sulphuric Acid every two hours.—*B.M.J.* '98, i. 298; *T.G.* '98, 534.

Used in the treatment of dysentery (evacuant treatment) in South Africa.—*L.* '03, ii. 7.

**Dose.**—30 to 120 grains = 2 to 8 grammes, for repeated

administration; for a single administration,  $\frac{1}{4}$  to  $\frac{1}{2}$  an oz. = 7·1 to 14·2 grammes.

**Prescribing Notes.**—Usually given in solution. It has a very unpleasant bitter taste which is difficult to mask, Sodium Sulphate is much more palatable. It is usually prescribed with Cinnamon Water or Peppermint Water, and Spirit of Chloroform.

Mixtures containing Magnesium Sulphate, Phenazone and a Salicylate throw down a bulky crystalline deposit, which has been stated to consist of Phenazone Salicylate, but has also been shown to yield a fairly definite percentage of Magnesium Oxide on ignition.—P.J. '99, ii. 332; '02, i. 22, 50, 143.

**Incompatibles.**—Potassium and Sodium Carbonates and Bicarbonates, Lime Water, Lead Acetate. Magnesium Sulphate should not be prescribed with Tartarated Soda, for after some time Magnesium Tartrate will precipitate. The following prescription is an example: R Soda Tartaratæ, 3j; Magnes. Sulph., 5ij; Aquæ ad fl. 3iss.

**Official Preparation.**—Magnesii Sulphas Effervescent. Contained in Mistura Sennæ Composita. Used in the preparation of Magnesii Carbonas Levis, Magnesii Carbonas Ponderosa and Liquor Magnesii Carbonatis.

**Not Official.**—Magnesii Benzoas, Magnesii Salicylas and Magnesii Sulphis.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

Austr., Ger., Russ. and Swiss, have also a Magnesium Sulphuricum Siccum.

### MAGNESII SULPHAS EFFERVESCENT. EFFERVESCENT MAGNESIUM SULPHATE. B.P. Syn.—EFFERVESCENT EPSOM SALT.

Magnesium Sulphate, dried at 130° F. (54·4° C.), 77; Sodium Bicarbonate, in powder, 72; Tartaric Acid, in powder, 38; Citric Acid, in powder, 25; Refined Sugar, in powder, 21; make into granules. (About 1 in  $2\frac{1}{2}$ )

**Dose.**—60 to 240 grains = 4 to 16 grammes, for repeated administration; for a single administration,  $\frac{1}{2}$  to 1 oz. = 14·2 to 28·4 grammes.

**Official in Ger., Ital., Russ. and Swiss (Citrate).**

### Not Official.

**MAGNESII BENZOAS.**—A white, crystalline powder, soluble 1 in 30 of Water; sparingly in Alcohol (90 p.c.). Introduced as an antipyretic.

**Official in Dutch Supp.**

**Dose.**—5 to 15 grains = 0·32 to 1 gramme.

**MAGNESII SALICYLAS.**—Colourless, hygroscopic needles. Soluble 1 in 6 of Water; 1 in 167 of Alcohol (90 p.c.).

**Dose.**—50 to 100 grains = 3·24 to 6·48 grammes daily have been given with advantage in typhoid fever.—*L.M.R.* '88, 62; *P.J.* (3) xviii. 823; *T.G.* '88, 390.

Frequently of a pink colour, due to a trace of Iron, which may be removed by the previous treatment of the Magnesium Sulphate, as described.—*P.J.* '95, ii. 178; *C.D.* '95, ii. 356.

**MAGNESII SULPHIS.**—A white, crystalline powder, which gradually oxidises to Sulphate on exposure to the air.

**Solubility.**—1 in 100 of Water; insoluble in Alcohol (90 p.c.). Given in the place of Sodium Sulphite.

Recommended in diphtheria as a **gargle**, 1 in 16 of Water, or by the application of the powder to the fauces by means of a damp brush, leaving as much of the powder on the throat as possible. Successful treatment of diphtheria by insufflations and tablets of pure Magnesium Sulphite.—*L.* '94, ii. 474; '95, i. 344, 523, 587. Results in diphtheria not very marked.—*L.* '95, i. 1032.

**Dose.**—20 to 30 grains = 1·3 to 2 grammes.

### Not Official.

## MANGANESII OXIDUM PRÆPARATUM.

Digest finely-powdered commercial Black Oxide in Diluted Hydrochloric Acid for twenty-four hours, frequently shaking the bottle containing them; then pour off the Acid; wash the Oxide thoroughly with Water, pouring off the lighter portions each time for use, and rejecting the heavier and coarser particles; finally dry on a water-bath.

A remedy for gastrodynia, pyrosis, etc. Has been recommended as an emmenagogue.

**Dose.**—10 to 30 grains = 0·65 to 2 grammes.

**Official in Russ.**

**MANGANESII HYPOPHOSPHIS** ( $MnP_2H_4O_4$ ).—A pale pink granular powder, soluble 1 in 7 of Water.

Used in the preparation of Syrupus Hypophosphitum Compositus B.P.C.

**MANGANESII PHOSPHAS** ( $Mn_3P_2O_8 \cdot 7H_2O$ ).—A whitish powder, prepared by precipitating a Manganous salt with Sodium Phosphate. When freshly precipitated, and dried without heat, it has the above formula, corresponding to 26 p.c. of Water, but commercial samples seldom lose on ignition more than 20 p.c.

Used to replace part of the Iron in Ferrous Syrups.

**MANGANESII SULPHAS.**—Colourless or pale rose-coloured, right rhombic prisms.

**Solubility.**—7 in 10 of Water; insoluble in Alcohol (90 p.c.).

**Medicinal Properties.**—Purgative; it is, however, little used, being uncertain in its action and apt to cause vomiting; its taste is disagreeably styptic.

**Dose.**—1 to 5 grains = 0·065 to 0·32 grammes, as a tonic; 30 to 60 grains = 2 to 4 grammes, as a purgative.

**Official in Dutch, Fr., Mex., Port., Span. and U.S.**

**Manganesii et Sodii Citras**, and **Manganesii et Ferri Citras** are salts readily soluble in Water, and have been used as tonics in doses of 1 to 5 grains = 0·06 to 0·32 grammes.

### Not Official.

#### **MANNA.**

A concrete saccharine exudation, obtained by transverse incision from the Stems of *Fraxinus Ornius*; cultivated chiefly in Calabria and Sicily.

**Solubility.**—1 in 5 of Water; 1 in 150 of Alcohol (90 p.c.).

**Medicinal Properties.**—A mild laxative; in large doses apt to cause flatulence and griping pain; useful for children and delicate females, given in hot milk or in combination with other purgatives such as Senna.

**Dose.**—As a laxative, 60 grains to 1 oz. = 4 to 28·4 grammes.

**Official in all the Foreign Pharmacopeias.**

The larger and better kinds are called Flake Manna, and consist principally (60 to 80 p.c.) of Mannite,  $C_6H_{10}(HO)_6$ , eq. 180·74, together with Sugar and extractive matter. Contains about 10 p.c. of moisture.

Pure Mannite is easily crystallised from an Alcoholic Solution. It cannot be fermented by Yeast. It does not reduce Fehling's Solution, and gives no brown colour with boiling Solution of Potash.

**Official in Dutch Supp., Ital. and Swiss.**

**MANNA DEPURATA.**—Dissolve Manna, 10, in sufficient Water; strain and evaporate to 10. It is convenient for dispensing, and keeps good for a long time.

**Official in Dutch Supp.**

**SYRUPUS MANNÆ (Ger.).**—Manna, 10; dissolved in a mixture of Alcohol (90 p.c.) 2, Water 33, and made into a Syrup with Sugar 55, and Water 100.

**Official in Dutch Supp. and Russ.**

**MANNITOL HEXANITRATE** (Hexanitrin).—Colourless, crystalline, white needles, slightly soluble in Water, soluble in Alcohol and Ether. The nitrate of the hexatomic alcohol, Mannite. It explodes violently on being triturated or struck, and therefore requires great care in handling. Introduced as a vaso-dilator, stated to possess same action as the Erythrol compound, though not so powerful.—*B.M.J.* '95, ii. 1213; '98, i. 529, 893.

**Dose.**—1½ to 2 fl. dram. = 5·4 to 7·1 c.c. of a 1 p.c. Alcoholic solution.

**Not Official.**

**MARANTA.**

**ARROW-ROOT.**

The Starch obtained from the Roots of *Maranta arundinacca*, a native of the tropical parts of America and the West Indies; that from Bermuda being considered the best.

A light, white powder, or small pulverulent masses, free from unpleasant odour and taste.

**Medicinal Properties.**—Nutrient and demulcent, frequently taken with Milk. It should be first made into a thin paste with cold Milk, and boiling Milk added to make a thick mucilage.

**Official in Austr., Belg., Dan., Dutch Supp., Fr., Mex. (Arroru), Port. (Araruta), and Span.**

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**Not Official.**

**MASTICHE.**

**MASTICH.**

A concrete, resinous exudation, obtained by incisions in the bark of the Stem and large Branches of *Pistacia Lentiscus*, occurring as small irregular pale-yellow tears, brittle and either opaque or, far more frequently, transparent. Sp. gr. 1·06 to 1·07.

Produced in the Island of Scio.

**Solubility.**—Insoluble in Water; partly soluble in Alcohol (90 p.c.) and Oil of Turpentine; 2 in 1 of Ether; 2 in 1 of Chloroform.

**Medicinal Properties.**—Stimulant. Rarely used now except in solution as a temporary stopping for teeth.

**Official in Austr., Belg., Dan., Dutch Supp., Fr., Hung., Norw., Swed., Port., Mex. and Span. (Almaciga), and U.S.**

**MASTIC DENTAIRE (Fr.).**—Mastic 2, Ether 1. Dissolve.

Cotton saturated in this solution is a good stopping for decayed teeth.

**MASTIC AND CHLOROFORM.**—Mastic 2, Chloroform 1. Dissolve. Used for the same purpose as above.

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**Not Official.**

**MATICO.**

The dried Leaves of *Piper angustifolium*. Imported from Peru.

**Medicinal Properties.**—An agreeable aromatic astringent, tonic and stimulant, used in all forms of inflammation of the urinary passages. The Volatile Oil has a powerful styptic property,

and a solution of it is applied to leech-bites and other small bleeding wounds.

**Dose.**—Of the powder, 30 to 120 grains = 2 to 8 grammes, three times daily.

**Official in** Belg., Dutch Supp., Fr., Mex., Port. and U.S.

**INFUSUM MATICO.**—Matico Leaves, cut small, 1; boiling Distilled Water, 20. Infuse half an hour, and strain.

**Dose.**—1 to 4 fl. oz. = 28·4 to 113·6 c.c.

**EXTRACTUM MATICO FLUIDUM (U.S.).**—Prepared with a mixture of Alcohol (sp. gr. 0·820) 3, Water 1, so that 1 fl. oz. equals 1 oz. of Matico.

**TINCTURA MATICO.**—Matico Leaves, in coarse powder, 1; Alcohol (60 p.c.), 5. Macerate fourteen days, strain, express, and filter. (1 in 5)

Astringent. Useful in catarrh of the bladder in the aged.

**Dose.**—1 to 2 fl. dram. = 3·6 to 7·1 c.c.

**Official in** Fr., 1 and 5; Mex. 1 in 5; U.S., 1 in 10.

### Not Official.

#### MEDULLA RUBRA.

##### RED BONE-MARROW.

The Marrow of ox-bones, being a seat of formation of blood corpuscles, has been introduced in the treatment of pernicious anaemia, chlorosis, and haemoglobinuria. It may be given fresh or raw, spread as a sandwich, also in the form of 'Glycerin Extract,' in gelatin capsules, or as tablets.—*B.M.J.* '94, i. 1172; '95, i. 1084.

Red Marrow did not have the slightest effect in three cases of pernicious anaemia, one of which began rapidly to improve on treatment with arsenic.—*L.* '96, i. 285.

Good results in splenic leucocythemia.—*B.M.J.* '96, i. 840, 956.

#### MEL DEPURATUM.

##### CLARIFIED HONEY.

Honey of commerce, melted in a water-bath, and strained, while hot, through flannel previously moistened with warm Water.

**Medicinal Properties.**—Demulcent, laxative, and nutritive, but apt to gripe and occasion flatulence when given in large doses. In the form of **Oxymel** it is a useful addition to gargles and cough-mixtures, as it relieves the pain and dryness of the throat and also dysphagia.

**Official Preparations.**—Mel Boracis, Oxymel, Oxymel Scillæ. Contained in Confectio Piperis.

Official in all the Foreign Pharmacopœias; Port., Mellito Simples; Span., Miel Depurado.

### OXYMEL. OXYMEL.

Clarified Honey, liquefied (by weight), 40; Acetic Acid, 5; Distilled Water, *q.s.* to yield a product of the sp. gr. 1·320.

**Dose.**—1 to 2 fl. drm. = 3·6 to 7·1 c.c.

Official in Austr., Honey 2, Common Vinegar 1; Fr., Honey 4, White Vinegar 1; Dutch, Honey 19, Acetic Acid (30 p.c.) 1; Hung., Honey 50, Acetic Acid (96 p.c.) 1; Port., Honey 197, Acetic Acid (98 p.c.) 3; Russ., Honey 49, Acetic Acid (95 p.c.) 1; Span., Honey 23, Vinegar 8; Mex., Honey 100, Acetic Acid 6.

## MENTHÆ PIPERITÆ OLEUM.

### OIL OF PEPPERMINT.

Distilled from fresh flowering Peppermint, *Mentha piperita*.

A clear, colourless, pale yellow or greenish-yellow, oily liquid, possessing a peculiar refreshing odour and a characteristic taste, subsequently producing a sensation of coldness in the mouth. Sp. gr. 0·900 to 0·920. The principal constituent of the Oil is Menthol.

The variations in quality of the English Oils depend (1) upon whether they have been obtained from 'Black Mint' (the ordinary plant) or from 'White Mint'; (2) upon the subsequent rectification. So that from the finest double-rectified White Mint to the first crude distillate from the Black Mint, there are all manner of gradations, each of them sold as 'Ol. Menth. Pip. Ang.'

Dementholised Oil of Peppermint is commonly known as 'Menthene,' and is used for purposes of adulteration. A pure Peppermint Oil, cooled in a mixture of Ice and Salt, should, on the addition of one or two Menthol crystals, set to a more or less solid crystalline mass.

**American Oil of Peppermint** is also the product of *Mentha piperita*, but contains less Menthol.

**Japanese Oil of Peppermint** is obtained from *Mentha arvensis* var. *piperascens*, and is rich in Menthol.

**Solubility.**—In all proportions of Absolute Alcohol; 2 in 1 (*or less*) of Alcohol (90 p.c.), becomes turbid on adding more Alcohol.

**Medicinal Properties.**—A grateful aromatic, stimulant and carminative. Allays nausea, relieves spasmodic pains in the stomach. Useful in the flatulent colic of children.

Covers the taste of nauseous medicines, such as Rhubarb, and mitigates the griping effect of purgatives. It is also antiseptic. Externally applied it acts as a local anæsthetic and relieves neuralgic pain; *see also Menthol.*

**Dose.**— $\frac{1}{2}$  to 3 minims = 0·03 to 0·18 c.c.

**Prescribing Notes.**—*The Oil is taken on sugar, or in pill. See p. 481.*

**Official Preparations.**—Aqua Menthæ Piperitæ and Spiritus Menthæ Piperitæ. Contained in Pilula Rhei Composita and Tinctura Chloroformi et Morphinæ Composita.

**Not Official.**—Syrupus Menthæ Piperitæ.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital.** (Essenza di Menta), Jap. (Oleum Menthæ), Mex. (Aceite Volatil de Menta Piperita), Norw., Port. (Essencia de Hortela Pimenta), Russ., Span., Swed., Swiss and U.S.

The herb is Official in Dan., Ital., Norw. and Swed.

#### AQUA MENTHÆ PIPERITÆ. PEPPERMINT WATER.

Oil of Peppermint, 77 minims; Water, 1 $\frac{1}{2}$  gallons; distil  $\frac{2}{3}$ .  
(Oil about 1 in 1000)

**Dose.**—1 to 2 fl. oz. = 28·4 to 56·8 c.c.

**Official in Belg.**, 0·3 in 1000; Dan. and Russ., 1 in 2000; Dutch, 1 in 1000; U.S. and Jap., 1 in 500; Austr., Fr., Ger., Hung., Ital., Port., Span., Swed. and Swiss, distilled from the leaves; Mex., distilled from the plant.

#### SPIRITUS MENTHÆ PIPERITÆ. SPIRIT OF PEPPERMINT.

Oil of Peppermint, 1; Alcohol (90 p.c.), q.s. to yield 10.

Now 1 in 10 instead of 1 in 50.

**Dose.**—5 to 20 minims = 0·3 to 1·2 c.c.

**Official in Belg.** (Spiritus Menthæ), Oil 1, Alcohol 90; Fr. (Teinture d'Essence de Menthe), Oil 2, Alcohol 98; Dutch Supp., Ger. and Jap. (Spiritus Menthæ), 1 in 10; Swiss, 3 Oil in 100; U.S., from the leaves and oil, about 1 in 10; Austr. and Span., from leaves.

**Not Official.**

**SYRUPUS MENTHÆ PIPERITÆ.**—Spirit of Peppermint, 1; Simple Syrup, q.s. to yield 8.

A good flavouring for nauseous drugs.

**Official in Dutch Supp., Fr. and Ger.**

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**MENTHÆ VIRIDIS OLEUM.**

OIL OF SPEARMINT.

N.O. *Syn.*—MENTHÆ CRISPÆ OLEUM.

A colourless, pale yellow, or greenish-yellow, limpid liquid, having a characteristic odour and taste. The colour becomes darker with age. Sp.gr. 0·920 to 0·940. Distilled from fresh flowering Spearmint, *Mentha viridis*.

**Solubility.**—In all proportions of Absolute Alcohol; 1 in 1 (*or less*) of Alcohol (90 p.c.), becomes milky on adding more Alcohol.

**Medicinal Properties.**—Similar to those of Oleum Menthæ Piperitæ.

**Dose.**— $\frac{1}{2}$  to 3 minims = 0·03 to 0·18 c.c.

**Prescribing Notes.**—The oil is given on sugar, or made into pills with Liquorice Powder and Soap. See p. 481.

**Official Preparation.**—Aqua Menthæ Viridis.

**Official** in Belg., Dutch Supp., Hung., Port. (Essencia de Hortela), Russ., Span. and U.S.

**AQUA MENTHÆ VIRIDIS. SPEARMINT WATER.**

Oil of Spearmint, 77 minims; Water,  $1\frac{1}{2}$  gallons; distil two-thirds. (Oil about 1 in 1000)

**Dose.**—1 to 2 fl. oz. = 28·4 to 56·8 c.c.

**Official** in Belg., 0·3 in 1000; Dutch Supp., 1 in 100; U.S., 1 in 500; Port. (Agua de Hortela); Span., from leaves.

**Syrupus Menthæ Crispæ** (1 in 499) is **Official** in Dutch Supp.

**MENTHOL.**

MENTHOL.

 $C_{10}H_{20}O$ , eq. 154·98.

Large, colourless, acicular, or prismatic crystals, obtained from the Oil distilled from the fresh Herb of *Mentha arvensis*, vars. *piperascens* et *glabrata*, and of *Mentha piperita*. It melts at 43° C. (109·4° F.).

**Solubility.**—Almost insoluble in Water and Glycerin; soluble 5 in 1 of Alcohol (90 p.c.); 4 in 1 (nearly) of Chloroform; 8 in 3 of Ether; 10 in 7 of Petroleum Spirit; 1 in 4 of Olive Oil.

Menthol forms a liquid when rubbed with equal parts of either Carbolic Acid, Chloral Hydrate, or Thymol; 3 of Menthol and 2 Camphor form a liquid at ordinary temperatures, but when in equal parts is liquid only whilst warmed.

**Medicinal Properties.**—Antiseptic, stimulant, carminative, local anaesthetic. Applied in some forms of neuralgia and headache, also in rheumatism, in pruritus and in pleurodynia and toothache ; in parasitic cutaneous diseases ; a 10 p.c. alcoholic solution as a paint in diphtheria.

Used as a snuff, along with Boric Acid 2 parts, and Ammonium Chloride 3 parts ; also dissolved in oil as a spray for influenza, hay-fever, coryza and ozæna.

Menthol and Eucalyptus Oil dissolved in Alcohol (90 p.c.) is used with an oro-nasal inhaler for cold in the head.

A 20 p.c. solution in Olive Oil (with 3 p.c. Guaiacol) as an intralaryngeal injection (20 to 30 minims) in phthisis and bronchiectasis.—*Pr. liii. 276.*

A good remedy in painful enteritis with mucous diarrhoea.—*M.A. '95, 239.*

Spray containing 5 to 20 p.c. of Menthol recommended in tubercular laryngitis.—*T.G. '87, 762.*

Menthol and Iodoform equal parts as a surgical dressing.—*B.M.J. '88, i. 933.*

Intralaryngeal injection of a 10 p.c. solution of Menthol in Olive Oil, and administration of Boric Acid and Quinine Sulphate internally in two cases of gangrene of the lung.—*B.M.J. '99, i. 71.*

**Dose.**—½ to 2 grains = 0·032 to 0·13 grammes.

**Prescribing Notes.**—It is best made into pills by the addition of Soap and Dispensing Syrup. Usually employed externally. Largely used in the form of cones and pencils ; also by insufflation, or as an ointment, pigment or plaster.

**Official Preparation.**—Emplastrum Menthol.

**Not Official.**—Applicatio Menthol, Gossypium Menthol, Insufflatio Menthol, Insufflatio Menthol Composita, Pastillus Menthol, Pigmentum Menthol, Mentholate, Unguentum Menthol, Menthol Valerianate, Validol, Menthosol and Menthoxol.

**Official in Austr., Dan., Dutch Supp., Fr., Ger., Jap., Ital., Mex., Norw., Russ., Swed., Swiss and U.S.**

### EMPLASTRUM MENTHOL. MENTHOL PLASTER.

Menthol, 1½ ; Yellow Beeswax, 1 ; Resin, 7½. Mix in the Menthol when the melted Resin and Beeswax have cooled to 160° or 170° F. (71·1° or 76·7° C.).

The quantity of Menthol is reduced and that of the Resin slightly increased.

**Not Official.**

**APPLICATIO MENTHOL.**—Menthol, 2 ; Chloroform, 8 ; Pure Ether (sq. gr. 0·720), 8 ; Eau de Cologne, 4. A good external application for neuralgia.

**GOSSYPIUM MENTHOL.**—Menthol, 7 grains ; White Adepsine

Oil, 3 minims; Pure Ether, 6 fl. dram.; Cotton Wool, in a thin sheet, 60 grains.

**INSUFFLATIO MENTHOL** (Nasal).—Menthol, in powder, 5 grains; Bismuth Oxychloride,  $\frac{1}{2}$  oz.; Dried Starch, in fine powder, to 1 oz.

**INSUFFLATIO MENTHOL COMPOSITA**.—Menthol, 2 dram.; Ammonium Chloride, 3 dram.; Boric Acid to 1 oz.—*Central Throat.*

**PASTILLUS MENTHOL**.—Menthol,  $\frac{1}{6}$  grain; Glyco-gelatin, 20 grains.—*Throat.*

**PIGMENTUM MENTHOL**.—Menthol, 1; Olive Oil, 4.—*Guy's.*  
Menthol, 60 grains; Liquid Paraffin to 1 oz.—*Throat.*

**MENTHOLEATE**.—A name given to a solution of Menthol in Oleic Acid. Menthol 200 grains, Oleic Acid  $\frac{1}{2}$  fl. oz.; heat gently in a test-tube till dissolved. It is recommended as the best form for external application.

**UNGUENTUM MENTHOL**.—Menthol 5 grains, Vaseline 1 oz.—*Throat.*

**MENTHOL VALERIANATE**.—A clear, colourless, oily liquid, having a faint odour of Menthol. It is a Menthol Ester of Valerianic Acid, insoluble in Water, soluble in Alcohol (90 p.c.) and in Ether. It has been found useful as a stomachic and carminative to correct anorexia and vomiting accompanying tuberculosis, and in the vomiting of pregnancy. Also in hysteria and neuralgia.

**Dose**.—5 to 10 minims = 0·3 to 0·6 c.c. on Sugar.

**Validol**.—A solution of Menthol in Menthol Valerianate, containing about 30 p.c. of the former.

Under the name of **Menthosol**, a mixture of Menthol and Para-monochlorophenol has been introduced. It is applied in the form of 5, 10 or 15 p.c. solutions in laryngeal phthisis.—*B.M.J.E.* '02, i. 43.

**Menthoxol** is stated to be an alcoholic solution of Menthol, containing Hydrogen Peroxide. It has been used in the treatment of abscesses and suppurating wounds.

### Not Official.

### MENYANTHES.

#### BUCKBEAN.

The Leaves of *Menyanthes trifoliata*, a gentianaceous plant.

**Medicinal Properties**.—A bitter tonic and cathartic.

Recommended in functional amenorrhœa.—*L.* '85, i. 132, 235.

**Dose**.—2 to 6 fl. oz. = 56·8 to 170·4 c.c. of 1 in 20 Infusion.

**Official in Austr., Dutch, Ger., Hung. and Swiss, Trifolium Fibrinum; Dan., Fr., Norw., Russ. and Swed., Menyanthes;**

Ital., Trifoglio Fibrino; Port., Trifolio Fibrino; Span., Trebol Acuatico.

**EXTRACTUM MENYANTHIS.**—Buckbean exhausted with boiling Water, and the liquor evaporated to an Extract.

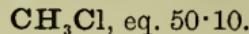
**Dose.**—15 to 30 grains = 1 to 2 grammes.

**Official in Austr., Dan., Dutch, Ger., Port., Russ., Swed. and Swiss.**

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### Not Official.

#### METHYL CHLORIDUM.



Methyl Chloride is a colourless gas, of an ethereal odour and a sweet taste, soluble in Water to the extent of 2·8 volumes. It is reduced to the liquid state by cold and pressure, and supplied in metal or glass cylinders, some of which are fitted with a valve and a tube for producing a jet.

**Medicinal Properties.**—It is used as a local anæsthetic for surgical procedures of short duration, producing intense cold by its evaporation. It is allowed to escape from the tube, forming a spray which should be applied obliquely to the part, but only for a few seconds, as if used incautiously, it may produce blisters or eschars.

Used in lumbago, sciatica and neuralgia by stypage, i.e. laying on the painful part a pledget of Cotton Wool or Lint soaked in the remedy; or the spray may be played on to the Wool as it lies on the part.

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### Not Official.

#### METHYLAL.



A colourless, volatile liquid, sp. gr. 0·855. Boils at 107° F. Readily soluble in Water and Alcohol (90 p.c.).

**Medicinal Properties.**—Has been employed as a hypnotic in delirium, mania and insomnia; mixed with Oil or Glycerin, as a local anæsthetic.

Toleration of the drug is soon established, when the dose must either be increased, or discontinued for two or three days.—*B.M.J.* '87, ii. 894; '88, i. 481; '88, ii. 1454; *L.* '90, i. 718.

Almost as ill adapted for a hypnotic as Ether.—*L.* '99, ii. 5.

**Dose.**—15 to 60 minims (in water) = 0·9 to 3·6 c.c.

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Not Official.

**METHYLENE BLUE.****TETRAMETHYLTHIONINE HYDROCHLORIDE.**

A dark green crystalline powder, possessing a bronze-green fluorescence. Soluble in Water. Even very dilute solutions possess an intense blue colour.

**Medicinal Properties.**—It has been employed as an analgesic in rheumatism and sciatica, also in migraine; in some cases it may produce gastric irritation and cystitis.—*B.M.J.* '98, ii. 1055; *B.M.J.E.* '00, ii. 75. It acts specifically in malaria and also in gonorrhœa.—*B.M.J.E.* '01, i. 104; *T.G.* '00, 474.

Intramuscular injection for diagnosing the degree of penetrability of the kidney tissue. 1 c.c. of a 5 p.c. solution injected deeply into the gluteal muscles. Urine should be greenish in colour half an hour after injection. A more rapid appearance of the colour, or its shortened elimination and delayed excretion serve as criteria for the degree of the renal lesion.—*T.G.* '00, 404; *Merck's Archives*, '99, 104.

**Dose.**—1 to 5 grains = 0·06 to 0·32 grammes.

**Prescribing Notes.**—*It is conveniently given in pills, using 'Diluted Glucose' as the excipient, or in capsules. Care must be taken to ensure purity of the sample, and only Zinc-free Methylene Blue should be used for internal administration.*

**Capsula Cystaminæ Composita** contains  $\frac{1}{2}$  grain of Methylene Blue in each capsule, together with Cystamine and Oil of Sandalwood.

**Dose.**—1 to 3 capsules.

**Antirheumatin**, a mixture of Sodium Salicylate and Methylene Blue, introduced as an anti-rheumatic, and administered internally in doses of 1 to 2 grains = 0·06 to 0·12 grammes. It must not be confounded with **Antirheumin**, which is a preparation containing Fluorine compounds.

**METHYL VIOLET.**—Under the fancy name **Pyoctanin** (blue) it has been recommended in the internal and local treatment of malignant tumours.—*T.G.* '94, 706; *B.M.J.E.* '94, ii. 12. As a local application (10 p.c. solution) in diphtheria.—*L.* '94, ii. 792; *B.M.J.E.* '93, ii. 12; '94, i. 3; *T.G.* '93, 118. Locally in corneal ulceration.—*T.G.* '93, 55.

**MEZEREI CORTEX.****MEZEREON BARK.**

The dried Bark of *Daphne Mezereum*, of *Daphne Laureola*, or of *Daphne Gnidium*.

**Medicinal Properties.**—A stimulant and vesicant. An ointment of the bark is used as an irritant to keep up

discharge. Rarely given alone internally, but it appears as an ingredient in Liquor Sarsæ Compositus Concentratus. It was formerly used in the treatment of syphilis.

**Official Preparation.**—Used in the preparation of Liquor Sarsæ Compositus Concentratus.

**Not Official.**—Extractum Mezerei Æthereum and Unguentum Mezerei.

**Official in Belg., Dutch, Fr., Mex., Port. (Trovisco), Span. (Mecereon), Swed., Swiss and U.S.**

#### Not Official.

**EXTRACTUM MEZEREI ÆTHEREUM (B.P. '85).**—The Ether-soluble portion of alcoholic extract of Mezereon Bark.

**Official in Belg. (Ext. Mezerei), Fr. (Extrait de Garou, from the *Daphne Gnidioides*), and Port. (Extracto de Trovisco) with Alcohol only; Swiss and U.S., Fluid Extract with Alcohol, 1 in 1.**

**UNGUENTUM MEZEREI (Fr.).**—Ext. Garou, 4; Lard, 90; White Wax, 10; Alcohol, 9.

#### Not Official.

### MORI SUCCUS.

#### MULBERRY JUICE.

The deep purple juice of the ripe Fruit of *Morus nigra*. Sp. gr. about 1·060.

**Medicinal Properties.**—Refrigerant and laxative; serves to prepare a grateful drink well adapted to febrile cases, and as a flavouring and colouring agent.

**Official in Fr., Suc de Mûre; Port., Amoras; Span., Zumo de Moras. The Fruit is Official in Ital.**

**SYRUPUS MORI.**—Mulberry Juice, 20; Refined Sugar, 36; Alcohol (90 p.c.), 2½; heat the Juice to the boiling-point, and, when it has cooled, filter it; dissolve the Sugar in the filtered liquid by a gentle heat, and add the Alcohol; the product should weigh 54. Sp. gr. 1·330.

**Dose.**—1 fl. dram. = 3·6 c.c.

**Official in Austr., Belg., Fr. (Siroop de Mûres), Hung., Ital., Mex., Span. and Swiss.**

#### Not Official.

### MORPHINA.

$C_{17}H_{19}NO_3$ ,  $H_2O$ , eq, 300·93.

When dried at 230° F. (110° C.) the  $H_2O$  is driven off, the equivalent is then 283·05.

Colourless, shining, rhombic prisms, or as a white, odourless,

crystalline powder, having a bitter taste and an alkaline reaction. It is the principal alkaloid obtained from Opium.

**Solubility.**—1 in 1000 of Cold Water; 1 in 100 of Alcohol (90 p.c.); 1 in 10 of Oleic Acid; 1 in 125 of Glycerin; but the solubilities depend very largely on the physical condition of the alkaloid. Insoluble in Ether (thus differing from Narcotine). Aqueous Alkalies, even Lime Water, dissolve it readily when freshly precipitated; Ammonia, however, but sparingly; where a very strong solution is required, Hypophosphorous Acid has been suggested as a solvent.

**Medicinal Properties** (*see Morphinæ Hydrochloridum*).—Owing to its slight solubility in Water it is rarely given in its purely alkaloidal form.

**Dose.**— $\frac{1}{10}$  to  $\frac{1}{2}$  grain = 0.0067 to 0.032 gramme.

**Official Preparations.**—Morphine Acetate, Morphine Hydrochloride, and Morphine Tartrate.

**Not Official.**—Diacetyl-morphine (Heroine), Benzoyl-morphine Hydrochloride (Peronine), Mono-ethyl-morphine Hydrochloride (Dionine), Morphine Hydrobromide, Morphine Lactate, and Morphine Sulphate.

**Official in Belg., Fr., Hung., Mex., Port., Span. and U.S.**

**DIACETYL-MORPHINE** (Heroine).—A fine white, odourless, crystalline powder, possessing a feeble bitter taste, and having the formula  $C_{17}H_{17}NO(C_2H_3O_2)_2$ , eq. 366.45. Soluble 1 in 900 of Water; 1 in 40 of Alcohol (90 p.c.); readily in diluted acids.

**Official in Russ.**

**DIACETYL - MORPHINE HYDROCHLORIDE** (Heroine Hydrochloride).—A white, odourless, crystalline powder.

**Solubility.**—1 in 2 of Water; 1 in 11 Alcohol (90 p.c.); insoluble in Ether.

**Medicinal Properties.**—Introduced as a substitute for Morphine, it being stated to possess the advantages that it does not cause constipation, and that it is active in much smaller doses than the latter. Has been found useful in diseases of the respiratory organs, such as acute and chronic bronchitis, bronchial asthma, the cough of phthisis, in acute pneumonia and in pertussis.

Result of five years' experience in the use of this drug in simple bronchitis, bronchitis with measles, the bronchitis of influenza, chronic catarrhal bronchitis, phthisis and pneumonia: its effects as a cough-relieving agent were prompt and definite, and in the case of almost incessant cough or severe paroxysms during the night its good effects were especially noticeable, whilst in phthisis its use was followed by most satisfactory results. In chronic bronchial catarrh it seems to have a positive curative value. In measles when the bronchial irritation was prominent, nothing else was found as serviceable.—*L.* '00, i. 180.

A valuable therapeutic agent. Allays cough and eases respiration.

tion. Useful in chronic bronchitis and asthma; also in dyspnoea.—*B.M.J.E.* '99, i. 59, 67; '99, ii. 87; *P.J.* '99, i. 60.

Stockman and Dott (*B.M.J.* '90, ii. 189) published an elaborate report on the pharmacology of Morphine and its alkyl and acid derivatives. They found the tetanising power of Acetyl, and Diacetyl-morphine to be much greater, while their narcotic action, although visible after smaller doses, is never nearly so profound. Increase of dose, instead of deepening the narcosis, brings on tetanic symptoms. The depressant action of small doses on the cord and especially on the respiratory centre is very much greater than that of Morphine. As compared with Codeine they induce an equal narcotic effect with about  $\frac{1}{10}$  the dose, while about a three times larger dose is necessary to cause tetanus. Their depressing action on motor nerves is about the same. These results are again referred to and epitomised in the Croonian Lecture on 'Some Points connected with Sleep, Sleeplessness and Hypnotics.'—*L.* '99, i. 139, and an editorial, p. 165. Pointed out that Diacetyl-morphine and Benzoyl-morphine are prepared and supplied under these names by several manufacturers, and that the chemistry and physiological action were fully investigated in 1889-90.—*B.M.J.* '99, i. 675. Unfavourably reported on.—*P.J.* '99, ii. 65.

Has a much greater effect on the respiratory centre, an effect which has been compared to the action of Digitalis on the heart, but doubtful if this action will prove of much use therapeutically. *B.M.J.* '02, ii. 1222.

Has been recommended in the treatment of the morphia habit, but its use is deprecated on the ground that the craving following its use is infinitely more unmanageable than is that of Morphine. *B.M.J.E.* '01, ii. 24; *L.* '01, ii. 263.

**Dose.**— $\frac{1}{24}$  to  $\frac{1}{6}$  grain = 0.0027 to 0.01 gramme.

It is advisable to commence with the smaller dose, as some persons are easily affected by it, and repeated doses of  $\frac{1}{16}$  and  $\frac{1}{12}$  grain have produced toxic symptoms.

**Official** in Russ. maximum single dose, 0.01 gramme; maximum daily dose, 0.02 gramme.

**BENZOYL-MORPHINE HYDROCHLORIDE** (Peronine).—A bitter, odourless, white, micro-crystalline powder, soluble 1 in 200 of Water; 1 in 160 of Alcohol (90 p.c.); insoluble in Chloroform and Ether.

**Medicinal Properties.**—Narcotic and sedative, introduced as a substitute for Morphine and Codeine, in diseases of the respiratory organs, especially in the irritative cough of phthisis and chronic bronchitis.—*B.M.J.E.* '98, ii. 43; *L.* '99, ii. 139.

An exhaustive report on Benzoyl-morphine by Stockman and Dott; the remarks found under Diacetyl-morphine are also applicable to the Benzoyl compound.—*L.* '90, ii. 191; '99, ii. 139.

Instillation of 1 to 2 p.c. solution into conjunctival sac induces anaesthesia of the cornea.—*B.M.J.E.* '99, ii. 71.

**Dose.**— $\frac{1}{8}$  to  $\frac{1}{2}$  grain = 0.008 to 0.032 grammes.

**MONO-ETHYL-MORPHINE HYDROCHLORIDE** (Dionine).—A bitter, odourless, white, micro-crystalline powder, soluble 1 in 7 of Water and 1 in 5 of Alcohol (90 p.c.) ; insoluble in Ether.

Slight variations in temperature have an appreciable effect on the solubility of the salt.

**Medicinal Properties.**—Narcotic and sedative. Introduced as a substitute for Morphine and Codeine. Has been found useful in relieving the cough of phthisis and in bronchitis.—*B.M.J.E.* '99, i. 36; '01, ii. 68; '02, i. 60; *P.J.* '01, ii. 645.

In the treatment of the drug habit,  $\frac{1}{4}$  to  $\frac{1}{2}$  grain doses.—*B.M.J.E.* '99, i. 83.

In the form of a 2 to 5 p.c. solution instilled into the conjunctival sac or injected beneath the conjunctiva.—*M.A.* '02, 23; *L.* '03, ii. 1795; *P.J.* '01, i. 702.

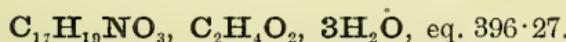
As an ocular analgesic in 5 p.c. aqueous solution, or as an ointment of similar strength.—*B.M.J.* '04, i. 1009.

Approaches more closely to Morphine in its action than Diacetyl-morphine. Appears to be slightly more sedative than Codeine, but otherwise possesses the same action.—*B.M.J.* '02, ii. 1219.

**Dose.**— $\frac{1}{3}$  to  $\frac{1}{2}$  grain = 0.021 to 0.032 grammes, dissolved in Water ; or in the form of a syrup.

## MORPHINÆ ACETAS.

### MORPHINE ACETATE.



A light, white, crystalline powder, possessing a faint acetous odour and a bitter taste. It should be kept in amber-coloured stoppered bottles.

**Solubility.**—Theoretically 1 in  $2\frac{1}{2}$  of Water, but most samples will require the addition of Acid ; 1 in 100 of Alcohol (90 p.c.) ; 1 in 5 of Glycerin.

**Medicinal Properties.**—See Morphinæ Hydrochloridum.

The Injectio Morphinæ Hypodermica formerly (*B.P.* 1885) contained one grain of Morphine Acetate in ten minims, now (*B.P.* 1898) it contains one grain of Morphine Tartrate in twenty-two minims.

Recommended in the treatment of diabetes.—*Pr.* xxxviii. 20 ; *B.M.J.* '89, i. 118.

**Dose.**— $\frac{1}{3}$  to  $\frac{1}{2}$  grain = 0.008 to 0.032 grammes.

*Dutch Supp.*, maximum single dose, 0.03 grammes ; maximum daily dose, 0.1 grammes.

**Prescribing Notes.**—As it is practically impossible to dry

*the salt without a slight loss of Acetic Acid, the commercial Acetate generally requires a little added Acetic Acid to make a clear solution. Aqueous solutions have a strong tendency to deposit basic salts, and to become acid.*

**Incompatibles.**—Alkalies and alkaline earths, astringent vegetable infusions and decoctions.

**Official Preparation.**—Liquor Morphinæ Acetatis.

**Not Official.**—Injectio Morphinæ et Atropinæ Hypodermica.

**Antidotes.**—See Morphine Hydrochloride.

**Official in Belg., Dutch Supp., Mex., Port., Span. and U.S.**

**LIQUOR MORPHINÆ ACETATIS. SOLUTION OF MORPHINE ACETATE.**

Morphine Acetate,  $17\frac{1}{2}$  grains ; Diluted Acetic Acid, 38 minimis ; Alcohol (90 p.c.), 1 fl. oz. ; Distilled Water, *q.s.* to yield 4 fl. oz. (1 in 100)

**Dose.**—10 to 60 minimis = 0·6 to 3·6 c.c.

11 minimis contain  $\frac{1}{10}$  grain.

**Not Official.**

**INJECTIO MORPHINÆ ET ATROPINÆ HYPODERMICA.**—Morphine Acetate, 10 grains ; Atropine Sulphate,  $\frac{1}{2}$  grain ; Water, 120 minimis ; dissolve.

$\frac{1}{2}$  grain of Morphine Acetate and  $\frac{1}{80}$  grain of Atropine Sulphate in every 6 minimis.

**Dose.**—1 to 6 minimis for each injection = 0·06 to 0·36 gramme.

Atropine combined with Morphine increases its analgesic and hypnotic effects, whilst it lessens the tendency to sickness and dyspepsia, also the depressing and constipating effects.

**Not Official.**

**MORPHINÆ HYDROBROMIDUM.**

MORPHINE HYDROBROMIDE.

$C_{17}H_{19}NO_3 \cdot HBr \cdot 2H_2O$ , eq. 399·16.

Forms long, colourless needles, soluble 1 in 25 Water, 1 in 50 of Alcohol (90 p.c.). It is employed for similar purposes to the Hydrochloride.

**Dose.**— $\frac{1}{8}$  to  $\frac{1}{2}$  grain = 0·008 to 0·032 gramme.

**Official in Fr. Codex.**

**MORPHINÆ HYDROCHLORIDUM.**

MORPHINE HYDROCHLORIDE.

HYDROCHLORATE OF MORPHINE.—*B.P.* '85. $C_{17}H_{19}NO_3 \cdot HCl \cdot 3H_2O$ , eq. 372·88.

White, odourless, lustrous, silky needles, or a white micro-crystalline powder, possessing a bitter taste.

**Solubility.**—1 in 24 of Water; about 1 in 50 of Alcohol (90 p.c.); 1 in 8 of Glycerin; insoluble in Ether.

**Medicinal Properties.**—Morphine possesses in a marked degree the anodyne and hypnotic effects of Opium. It has the advantage that it is less apt than Opium to disturb digestion and cause constipation, more particularly when given by hypodermic injection; it is also less likely to cause headache and nausea. It is more readily absorbed and acts quicker; it is better adapted for hypodermic injection and for suppositories. Opium, however, is better for relieving pain in the alimentary tract, as in gastric ulcer and abdominal pain; it is also more useful as a diaphoretic and in diabetes. It lessens the secretions, diminishes diarrhoea, and produces constipation. Children are very susceptible to the action of Opium.

In the treatment of puerperal eclampsia, injection of  $\frac{1}{6}$  to 1 grain.—*B.M.J.* '01, ii. 810; '02, i. 71, 509; *L.*'01, i. 1823; *T.G.* '01, 622.

**Dose.**— $\frac{1}{8}$  to  $\frac{1}{2}$  grain = 0·008 to 0·032 gramme.

*Ph. Ger.* maximum single dose, 0·03 gramme; maximum daily dose, 0·1 gramme.

**Prescribing Notes.**—*The salts of Morphine are all readily soluble in Water, the Acetate being the most soluble, but it is apt to deposit a basic salt; the Tartrate and Lactate are next, being about 1 in 10; the Sulphate, Hydrobromide and Hydrochloride are the least soluble, requiring rather more than 20 of Water to 1 of the salt.*

**Incompatibles.**—Alkalies and alkaline earths, astringent vegetable infusions and decoctions, Ferric Chloride.

**Official Preparations.**—*Liquor Morphinæ Hydrochloridi, Suppositoria Morphinæ, Trochiscus Morphinæ and Trochiscus Morphinæ et Ipecacuanhæ. Contained in Tinctura Chloroformi et Morphinæ Composita.*

**Not Official.**—*Insufflatio Morphinæ, Linctus Morphinæ, Linctus Morphinæ Acidus.*

**Antidotes.**—If taken by the mouth, induce vomiting, and wash out the stomach. Keep the patient walking about, and rouse him in every way. Ammonia or Spirit of Sal Volatile to the

nose, inject a pint of strong Coffee into the bowel. Hypodermic injection of Atropine Sulphate  $\frac{1}{20}$  grain, repeating in a quarter of an hour if necessary. Tincture of Belladonna, Amyl Nitrite inhalation, artificial respiration.—*Murrell.*  $\frac{3}{2}$  grain Strychnine acts as an antidote to  $\frac{1}{2}$  grain of Morphine.—*L.* '71, ii. 840, 907. Potassium Permanganate is used to wash out the stomach; a solution of 120 minimis of Liq. Pot. Permag. in a pint of Water is suitable. If quantity of Opium or Morphine taken is unknown, 8 to 10 grains Potassium Permanganate in from 4 to 8 fl. oz. of Water should be administered at once. The solution may be acidulated with Acid. Sulphuricum Dilutum with advantage.—*B.M.J.* '95, i. 1369; '95, ii. 55, 76; '96, i. 1194; *T.G.* '98, 97. Picrotoxine,  $\frac{1}{20}$  grain.—*L.* '89, i. 497.  $\frac{1}{2}$  grain doses of Cocaine at intervals of half an hour until consciousness returns and breathing is normal, as an antidote.—*M.P.* '02, i. 147; *P.J.* '02, i. 114.

Case of poisoning by 8 grains of Morphine Sulphate (in three hypodermic injections), treated by artificial respiration, subcutaneous injection of 30 oz. of normal saline solution, and drinking a diluted solution of Potassium Permanganate.—*L.* '02, i. 1317.

Value of Oxygen in poisoning by Morphine.—*L.* '98, ii. 545.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

**LIQUOR MORPHINÆ HYDROCHLORIDI.** SOLUTION OF MORPHINE HYDROCHLORIDE. *B.P.Syn.*—SOLUTION OF HYDROCHLORATE OF MORPHINE.

Morphine Hydrochloride,  $17\frac{1}{2}$  grains; Diluted Hydrochloric Acid, 38 minimis; Alcohol (90 p.c.), 1 fl. oz.; Distilled Water, q.s. to yield 4 fl. oz. (about 1 in 100)

**Dose.**—10 to 60 minimis = 0·6 to 3·6 c.c.

11 minimis contain  $\frac{1}{16}$  grain of Morphine Hydrochloride.

**Official in Port.** (*Soluto de Chlorhydrato de Morphina*), 1 in 20, for hypodermic injection.

**SUPPOSITORIA MORPHINÆ.** MORPHINE SUPPOSITORIES.

$\frac{1}{4}$  grain of Morphine Hydrochloride in each, with Oil of Theobroma.

Half the strength of *B.P.* '85.

**TINCTURA CHLOROFORMI ET MORPHINÆ COMPOSITA.**

The formula is given under Chloroform. The proportion of Morphine has been much increased, and is now more than four times what it was in *B.P.* '85. 10 minimis now contain  $\frac{3}{4}$  minim of Chloroform,  $\frac{1}{2}$  minim of Diluted Hydrocyanic Acid,  $\frac{1}{15}$  grain of Morphine Hydrochloride, and 1 minim of Tincture of Indian Hemp.

**TROCHISCUS MORPHINÆ.** MORPHINE LOZENGE.

$\frac{1}{36}$  grain of Morphine Hydrochloride in each lozenge, with Tolu Basis.

**Dose.**—1 to 6 lozenges. One occasionally for cough.

**TROCHISCUS MORPHINÆ ET IPECACUANHÆ.**

MORPHINE AND IPECACUANHA LOZENGE.

$\frac{1}{36}$  grain of Morphine Hydrochloride, and  $\frac{1}{12}$  grain of powdered Ipecacuanha Root in each, with Tolu Basis.

**Dose.**—1 to 6 lozenges. One occasionally for cough.

**Official in U.S.**,  $\frac{1}{40}$  grain of Morphine Sulphate, and  $\frac{2}{25}$  grain of Ipecacuanha in each; Swiss (Pastilli Ipecacuanhæ cum Opio), about  $\frac{1}{2}$  grain of each, Ipecacuanha and Opium.

**Not Official.**

**INSUFFLATIO MORPHINÆ.**—Morphine Hydrochloride,  $\frac{1}{4}$  grain; Bismuth Oxychloride, 1 grain; Starch,  $\frac{1}{2}$  grain.—*City Chest*.

The Morphine Insufflations of *Royal Chest* are dilutions with Milk Sugar, and those of *Throat* and *Great Northern*, with dried Starch.

**LINCTUS MORPHINÆ (Squire).**—Solution of Morphine Hydrochloride, 3 minims; Spirit of Chloroform, 3 minims; Glycerin, 30 minims; Syrup to 1 fl. drm.

**LINCTUS MORPHINÆ ACIDUS (Squire).**—Solution of Morphine Hydrochloride, 3 minims; Spirit of Chloroform, 3 minims; Lemon Juice, 15 minims; Glycerin to 1 drm.

Both the above are very palatable.

**Not Official.****MORPHINÆ LACTAS.**

Morphine Lactate,  $C_{17}H_{19}NO_3C_3H_6O_3$ , eq. 372·42, occurs in colourless, prismatic crystals.

**Solubility.**—1 in 8 of Water, 1 in 93 of Alcohol (90 p.c.).

**Dose.**— $\frac{1}{8}$  to  $\frac{1}{2}$  grain = 0·008 to 0·032 gramme.

**Not Official.****MORPHINÆ SULPHAS.**

Morphine Sulphate ( $C_{17}H_{19}NO_3$ )<sub>2</sub>,  $H_2SO_4$ ,  $5H_2O$ , eq. 752·84, occurs in colourless, acicular crystals.

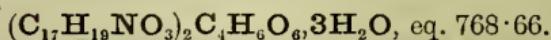
**Solubility.**—1 in 21 of Water, freely in hot Water; 1 in 700 of Alcohol (90 p.c.).

**Dose.**— $\frac{1}{8}$  to  $\frac{1}{2}$  grain = 0·008 to 0·032 gramme.

**Official in Belg., Dutch, Fr., Jap., Mex., Norw., Port., Span., Swiss and U.S.**

**MORPHINÆ TARTRAS.**

MORPHINE TARTRATE.



Colourless, acicular crystals, or as a fine, white, crystalline powder.

**Solubility.**—1 in 10 of Water; sparingly in Alcohol (90 p.c.).

The solubility of this salt is sometimes affected by the presence of a small quantity of the Acid Tartrate; the latter being much less soluble than the Official salt.

**Dose.**— $\frac{1}{8}$  to  $\frac{1}{2}$  grain = 0.008 to 0.032 gramine.

**Official Preparations.**—Injectio Morphinæ Hypodermica and Liquor Morphinæ Tartratis.

**INJECTIO MORPHINÆ HYPODERMICA. HYPODERMIC INJECTION OF MORPHINE.**

Dissolve 50 grains of Morphine Tartrate in recently boiled and cooled Distilled Water to produce 1100 minims. (1 in 20)

**Dose.**—*By subcutaneous injection*, 2 to 5 minims = 0.12 to 0.3 c.c.

The Official Hypodermic Injection is now made with the Tartrate, containing 1 grain in 22 minims, which is about half the strength of that in B.P.'85. Seeing the great difference in strength of the various solutions of Morphine salts, it is extremely important that they should be very plainly labelled, and used with very great care. It is also desirable that prescribers should clearly define the strength.

Tablets for making the injection are convenient and portable.

Atropine Sulphate,  $\frac{1}{200}$  to  $\frac{1}{100}$  grain is added to each dose of Morphine Injection to increase its analgesic and hypnotic effects, and to lessen its depressing and constipating effects.

**LIQUOR MORPHINÆ TARTRATIS. SOLUTION OF MORPHINE TARTRATE.**

Morphine Tartrate,  $17\frac{1}{2}$  grains; Alcohol (90 p.c.), 1 fl. oz.; Distilled Water, *q.s.* to yield 4 fl. oz. (1 in 100)

**Dose.**—10 to 60 minims = 0.6 to 3.6 c.c.

11 minims contain  $\frac{1}{10}$  grain.

**MORRHUÆ OLEUM.**

COD-LIVER OIL.

N.O.Syn.—OLEUM JECORIS ASELLI.

A pale yellow, or yellow oily fluid, possessing a character-

istic fishy odour and taste ; extracted from the fresh liver of the Cod, *Gadus Morrhua*, at a temperature not exceeding 180° F. (82·2° C.) ; subsequently removing solid fat by filtration at about 23° F. (-5° C.).

The alkaloids Morrhuiine and Aselline have been isolated.

**Solubility.**—Sparingly in Absolute Alcohol ; 1 in 2 of Ether ; 1 in 3½ to 4 of Acetic Ether.

A solvent of pure Quinine. 1 fl. oz. at 140° F. will dissolve 4 grains readily.

**Medicinal Properties.**—Nutritive ; nervine and hæmatinic tonic. Most efficient in scrofulous diseases, glandular swellings, tubercular diseases of the joints and bones, tabes mesenterica, rickets, chronic rheumatism and tertiary syphilis ; chronic bronchitis and neuralgias ; and generally in all cases of impaired nutrition and nervous debility due to over-work, exhaustion and under-feeding. In pulmonary consumption it deservedly possesses a high reputation : given in emulsion, with or without Malt Extract. It is contra-indicated in hæmoptysis and diarrhoea. It is easily assimilated, and is best given after meals, but it may produce indigestion and nausea ; sometimes administered by inunction, but the odour is objectionable.

**Dose.**—1 to 4 fl. dram. = 3·6 to 14·2 c.c.

**Prescribing Notes.**—Numerous and varied methods have been adopted for covering the taste of the Oil, which is apt to cause nausea. It has been given floating on Orange Wine, Orange Juice, Milk, Coffee, also a mixture of Tincture of Orange, diluted mineral Acid and Syrup. A favourite form is that of the Emulsion which may be made with Gum Acacia, Tragacanth, or yolk of egg or any combination of them ; the formula included in B.P.C. is a good example ; another and very excellent method is that given under Malt Extract, see p. 145. The Oil by itself may be given in capsules containing 30 or 60 minims in each.

**Not Official.**—Emulsio Olei Morrhuae and Morruol.

**Official in Austr., Belg., Dan., Dutch, Ger., Hung., Norw., Russ., Swed. and Swiss,** Ol. Jecoris Aselli ; Fr., Huile de Foie de Morue ; Ital., Olio di Fegato di Merluzzo ; Jap., Ol. Jecoris ; Port., Oleo de Bacalhau ; Mex. and Span., Aceite de Higado de Bacalao ; U.S., Oleum Morrhuae. Swed. has also Oleum Jecoris Aselli Ferratum.

#### Not Official.

**EMULSIO OLEI MORRHUÆ (B.P.C.).**—Cod-Liver Oil, 8 fl. oz. ; the Yolks of two Eggs ; Tragacanth in powder, 16 grains ; Elixir of Gluside, 60 minims ; Simple Tincture of Benzoin, 60 minims ; Spirit of Chloroform, ½ fl. oz. ; Essential Oil of Bitter Almonds, 8 minims ; Distilled Water to produce 16 fl. oz. Measure 5 fl. oz.

of the Water ; place the Tragacanth in a dry mortar and triturate with a little of the Cod-Liver Oil ; then add the yolks of Eggs, and stir briskly, adding Water as the mixture thickens. When of a suitable consistence, add the remainder of the Oil and Water alternately, with constant stirring, avoiding frothing. Transfer to a pint bottle, add the Elixir of Gluside, Tincture of Benzoin, Spirit of Chloroform, and Oil of Almonds, previously mixed ; shake well, and add Distilled Water if necessary to make the product measure 16 fl. oz.

**Dose.**—2 to 8 fl. drm. = 7·1 to 28·4 c.c.

This preparation can be medicated with any desired salt by dissolving such salt in the Water previous to making the emulsion ; **Cod-Liver Oil Emulsion with Glycerophosphates**, and **Cod-Liver Oil with Hypophosphites** are typical preparations. Substances soluble in the Oil should be added to it before emulsification.

Pancreatised Cod-Liver Oil is stated to be more easily digested than Cod-Liver Oil alone.

**MORRHUOL.**—Cod-Liver Oil treated first with aqueous solution of Sodium Bicarbonate to remove the acids, then agitated with Alcohol (90 p.c.), which on evaporation yields Morrhoul. Brown Oil yields 4½ to 6 p.c., the straw coloured 2½ to 3 p.c.—*Y.B.P.* '86, 234 ; *P.J.* '97, ii. 458.

Proposed as a substitute for Cod-Liver Oil, but without the Carbo-hydrates, and owing to its small bulk is adapted for administration in capsules.

**Dose.**—3 grains = 0·2 grammie.

Official in Dutch Supp.

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## MOSCHUS.

### MUSK.

The dried secretion from the preputial Follicles of *Moschus moschiferus*. Dark reddish-brown grains or masses of grains, somewhat unctuous to the touch, and possessing a peculiar penetrating persistent odour and a somewhat bitter taste.

*Dan.*, should be practically free from moisture and yield not more than 8 p.c. of ash ; *U.S.*, 8 p.c. of ash.

Commercial samples contain large quantities of moisture (about 30 p.c.).

The Musk-deer is a native of the mountainous regions of Central Asia. Musk is imported from China and India.

**Medicinal Properties.**—A diffusible stimulant and antispasmodic. Useful in hysteria and epilepsy and spasmodic asthma, and as a stimulant in pneumonia and febrile diseases.

**Dose.**—5 to 10 grains = 0·32 to 0·65 grammie.

**Prescribing Notes.**—Usually prescribed in a mixture or in pills. See formulas given below.

**Not Official.**—*Mistura Moschi*, *Moschus Exsiccatus*, *Pilula Moschi*, and *Tinctura Moschi*.

**Official** in all except Austr., Ger. and Ital.; Fr., Musc; Port., Almiscar; Mex. and Span., Almizcle.

### Not Official.

**MISTURA MOSCHI.**—Musk, 3; Gum Acacia, 3; Sugar, 3; Rose Water, 160; triturate the Musk with the Sugar, then with the Gum Acacia; add the Rose Water gradually.

**Dose.**—1 to 2 fl. oz. = 28·4 to 56·8 c.c.

An emulsion (1 in 100) is **Official** in Swed.

**MOSCHUS EXSICCATUS.**—Musk which has been dried over Strong Sulphuric Acid. It keeps better than that which is usually supplied as ‘grained Musk.’ It is easily made into pills with Dispensing Syrup, or ‘Diluted Glucose.’

**PILULA MOSCHI.**—Musk, 12; Powdered Gum Acacia, 3; Powdered Liquorice, 3.

Dried Musk, 12; Powdered Gum Acacia, 1; ‘Diluted Glucose,’ q.s.

**TINCTURA MOSCHI.**—Musk, 60 grains; Alcohol (90 p.c.), 10 fl. oz.: digest seven days, and strain.

**Official** in Belg., Fr., Mex. and Port., 1 in 10; Dan., Dutch, Russ. and Swiss, 1 in 50; Span., 1 in 25; U.S., Musk 1, Water 9, Alcohol 9, Diluted Alcohol to measure 10. All by weight except U.S.

### Not Official.

## MYRABOLANUM.

The dried immature Fruits of *Terminalia Chebula*, commonly known as *Chebulic myrabolans*.

**Dose.**—30 to 60 grains = 2 to 4 grammes.

**Unguentum Myrabolani** (1 in 5), made with benzoated Lard, and **Unguentum Myrabolani cum Opio** (Opium 1, Myrabolan Ointment 12½), are **Official** in the Ind. and Col. Add. for India and the Eastern Colonies.

## MYRISTICA.

### NUTMEG.

The dried Seed of *Myristica fragrans*, divested of its testa.

It is cultivated in the Banda Islands of the Malayan Archi-

pelago and imported from Sumatra and the Molucca Islands, and occasionally from the West Indies and the Seychelles.

Nutmegs yield about 2 to 3 p.c. of ash.

**Medicinal Properties.**—Aromatic, stimulant, and carminative. Frequently used to cover the taste of Rhubarb and other medicines. The expressed and volatile Oils have been much used in chronic rheumatic pains and in lotions for the hair. In large doses it acts as a narcotic poison.

Severe toxic symptoms followed on taking a whole nutmeg, grated, in a wineglassful of Gin to procure abortion.—*L. '02, i. 1035, 1798.*

**Dose.**—5 to 15 grains = 0·32 to 1·0 grainne.

**Prescribing Notes.**—*The Oil may be given on Sugar, or in pill with Liquorice powder and Soap, see p. 481.*

**Official Preparation.**—*Oleum Myristicæ.* Used in the preparation of Pulvis Catechu Compositus, Pulvis Cretæ Aromaticus, Spiritus Armoraciae Compositus and Tinctura Lavandulæ Composita ; of the Oil, *Spiritus Myristicæ*. Used in the preparation of *Spiritus Ammoniae Aromaticus*, *Tinctura Guaiaci Ammoniata*, *Tinctura Valerianæ Ammoniata* and *Pilula Aloes Socratina*. Of the **Spirit**, contained in *Mistura Ferri Composita*.

**Not Official.**—*Oleum Myristicæ Expressum.*

**Official in Austr., Belg., Dutch, Fr. (Muscade), Ger., Hung., Ital., Mex., Port., Russ., Span., Swed., Swiss and U.S.**

### OLEUM MYRISTICÆ. OIL OF NUTMEG.

A colourless, or pale yellow, mobile liquid, possessing a characteristic odour and a spicy taste ; distilled from Nutmeg.

It darkens in colour and becomes viscid by oxidation on exposure to air.

Sp. gr. varies considerably ; it is sometimes as low as 0·880, and occasionally as high as 0·930.

**Solubility.**—In all proportions of Absolute Alcohol ; 1 in 4½ of Alcohol (90 p.c.) ; sparingly in Alcohol (60 p.c.).

**Dose.**—½ to 3 minims = 0·03 to 0·18 c.c.

**Official in Austr., Belg., Dan., Dutch, Ger. (Oleum Macidis), Hung., Norw., Port., Russ., Swed., Swiss and U.S.**

### SPIRITUS MYRISTICÆ. SPIRIT OF NUTMEG.

Oil of Nutmeg, 1 ; Alcohol (90 p.c.), *q.s.* to produce 10.

Should be clarified if necessary, by means of Talc.

Now 1 in 10 instead of 1 in 50.

**Dose.**—5 to 20 minims = 0·3 to 1·2 c.c.

**Official in U.S.**, 5 in 100.

**Not Official.**

**OLEUM MYRISTICÆ EXPRESSUM.** *Syn. MYRISTICÆ ADEPS.*—

A concrete Oil, of a firm consistence and orange colour, obtained from Nutmeg by expression and heat.

Official in Austr., Ol. Myristicæ Expressum; Belg. and Ger., Ol. Nucistæ; Dutch and Swiss, Oleum Myristicæ; Fr., Beurre de Muscade; Mex., Port., Span., Aceite de Nuez Moscada.

## MYRRHA.

### MYRRH.

Small, irregular, brownish-yellow, or reddish-brown, rounded fragments, or tears, or in masses of them, having a dusty appearance on the surface, and possessing a strong characteristic aromatic odour. It is a gum-resin obtained from the Stem of *Balsamodendron Myrrha*, and probably other species.

Collected in South-eastern Arabia and Somaliland.

**Solubility.**—Myrrh contains from 40 to 65 p.c. of gum soluble in Water; the remainder, consisting of resin, is mostly soluble in Alcohol.

**Medicinal Properties.**—Stomachic and carminative; emmenagogue. Locally to aphthæ of mouth and spongy gums.

**Prescribing Notes.**—*The Tincture mixed with Water (1 to 24) is used for a gargle, but the addition of Mucilage of Gum Acacia is often necessary; also mixed with Solution of Borax for a mouth-wash.*

**Official Preparation.**—Tinctura Myrrhæ. Contained in Decoctum Aloes Compositum, Mistura Ferri Composita, Pilula Aloes et Myrrhæ, Pilula Galbani Composita, and Pilula Rhei Composita.

Official in all the Foreign Pharmacopœias except Hung.

**TINCTURA MYRRHÆ.** TINCTURE OF MYRRH.

Myrrh, 1; Alcohol (90 p.c.), q.s. to yield 5.

Now 1 in 5 instead of 1 in 8.

**Dose.**—½ to 1 fl. dram. = 1·8 to 3·6 c.c.

Official in Austr., Belg., Dan., Dutch, Fr., Ger., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S., 1 in 5. All by weight except U.S.

**TINCTURE OF MYRRH AND BORAX.**—See BORAX.

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Not Official.

## NAPHTHALINUM.

NAPHTHALENE.

$C_{10}H_8$ , eq. 127·10.

Crude Naphthalene is a hydrocarbon, crystallising from coal-

tar. When purified by sublimation it occurs in white micaceous scales, with a characteristic odour, melting at 80° C. (176° F.).

**Solubility.**—Insoluble in Water; soluble 1 in 25 of Alcohol (90 p.c.); 1 in 1½ of Chloroform; 1 in 3 of Ether; 1 in 7½ of Oil of Turpentine; 1 in 8 of Olive Oil; slightly soluble in Glycerin.

**Medicinal Properties.**—Antiseptic; the fine powder is dusted over ulcers and wounds, and is useful for disinfecting cavities. It has been employed in gastric fermentation, and in catarrhal conditions of the intestines; also as a parasiticide in scabies, as 10 p.c. solution in Olive Oil, or as an Ointment.

Crude Naphthalene in balls and other fanciful shapes is used to protect furs and woollen articles from moths.

**Dose.**—Usual dose, 2 to 5 grains = 0·13 to 0·32 gramme, every four or six hours. Larger doses have been given, but are apt to upset digestion, and in some cases to produce toxic symptoms.

**Prescribing Notes.**—*It has a nauseous taste and odour; when given internally it may be enclosed in a cachet or capsule; or made into pills with 1 of Compound Tragacanth Powder to 12, and massed with 'Diluted Glucose.'*

Official in Austr., Dutch, Ger., Ital., Mex., Russ., Swed., Swiss and U.S.

**NAPHTHALINUM PRÆCIPITATUM.**—A fine powder, obtained by dissolving the crystals in hot Alcohol, and pouring into a quantity of cold Water. Recommended as less irritating than the powdered crystals.

**PULVIS NAPHTHALINI (Rossbach).**—Purified Naphthalene, 75 grains; Sugar, 75 grains; Oil of Bergamot, ½ minim; divide into twenty powders. In vesical catarrh.—*L.* '85, i. 360.

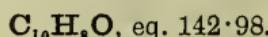
**NAFTALAN.**—A dark, greenish-black, unctuous substance, insoluble in Water, soluble in Ether and in Chloroform. Used in the treatment of various skin diseases, and stated to be a good vehicle for the application of antiseptic preparations.—*L.* '99, i. 1234; *B.M.J.E.* '99, i. 92; *P.J.* '01, ii. 124.

**Naphthalini Tetrachloridum.**—Glistening, white crystals, insoluble in Water

**Dose.**—2 to 10 grains = 0·13 to 0·65 gramme.

## NAPHTHOL.

### BETA-NAPHTHOL.



Beta-naphthol, or Beta-mono-hydroxy-naphthalene, occurs in white, or pale yellowish, lustrous, crystalline laminæ or as a white, or almost white crystalline powder, having a faint odour of Phenol.

There are two isomeric Naphthols, **Alpha-Naphthol** and **Beta-Naphthol**, bearing the same relation to Naphthalene as Phenol does to Benzol.

**Solubility.**—Nearly insoluble in Water; soluble 1 in 2 of Alcohol (90 p.c.); 3 in 4 of Ether; 1 in 24 of Chloroform; 1 in 12 of Olive Oil; 1 in 40 of Glycerin.

Aqueous solution of Boric Acid will dissolve comparatively small quantities of Naphthol.

**Medicinal Properties.**—A disinfectant and intestinal antiseptic. Should be given with caution in renal diseases. Has been given in 5 grain doses for summer diarrhoea in children. Used in parasitic diseases and in chronic eczema.

**Dose.**—3 to 10 grains = 0·2 to 0·65 grammes.

**Prescribing Notes.**—Given in *cachets* or pills. A good pill can be made by adding a small quantity of Compound Powder of Tragacanth and Dispensing Syrup, or 'Diluted Glucose,' q.s. Also administered dissolved in Oil, which is then emulsified. It can be made into an Ointment with Lard, Soft Paraffin or Lanolin Ointment; for Kaposi's Ointments, see below.

When no prefix is attached to the name, Beta-Naphthol should be used. The name is also written Naphtol.

Should be kept in dark amber-tinted well-stoppered bottles.

**Not Official.**—Unguentum Naphtholi, Unguentum Naphtholi Compositum, Asaprol, Benzonaphthol, Betol, Epicarin, Quinaphthol.

**Official in** Austr., Dan., Dutch, Fr., Ger., Hung., Ital., Mex., Norw., Russ., Swed., Swiss and U.S.

### Not Official.

**UNGUENTUM NAPHTHOLI** (Kaposi's Ointment).—Beta-Naphthol, 60 grains; Prepared Lard, 1 oz.—*British Skin.*

**UNGUENTUM NAPHTHOLI COMPOSITUM** (Kaposi).—Naphthol, 15; Prepared Chalk, 10; Soft Soap, 50; Lard, 100.

**ASAPROL. ABRASTOL** (Calcum Beta-naphthol-alpha-monosulphonate).—A white powder, soluble in Water. Has been recommended as an antipyretic and analgesic, in sciatica, muscular and chronic rheumatism and in chronic nephritis.—*T.G.* '93, 182; '94, 252; *Pr.* liii. 52; *M.A.* '95, 8; *Y.B.T.* '94, 462; '95, 159.

**Dose.**—5 to 15 grains = 0·32 to 1 grammes.

**BENZONAPHTHOL.**—A white, odourless, tasteless powder, almost insoluble in Water and Ether; soluble in Chloroform.

Intestinal antiseptic, and disinfectant. Has been found useful in typhoid.—*Pr.* li. 213. In tropical dysentery.—*L.* '95, ii. 169; *P.J.* '95, ii. 238.

**Dose.**—5 to 15 grains = 0·32 to 1 grammes.

**BETOL. NAPHTHALOL** (Salicylate of  $\beta$ -Naphthol Ester).—In tasteless, small white crystals, insoluble in Water, soluble in

Alcohol and in fixed Oils. Recommended in rheumatism, cystitis and intestinal catarrh.

**Dose.**—2 to 8 grains = 0·13 to 0·52 grammes as a powder, or in pills with Glucose.

**Official** in Dutch Supp. and Ital.

In pencils for gonorrhœa containing 20 p.c. of Betol with Oil of Theobroma.

**Alphol** is the Salicylate of  $\alpha$ -Naphthol Ester.

**EPICARIN** (Beta-oxynaphthyl-orthoxy-meta-toluyllic Acid).—Colourless needle-shaped crystals, or a pale yellow powder, insoluble in Water, soluble in Alcohol and Ether. Employed in the form of a 10 to 20 p.c. Ointment in the treatment of psoriasis, eczema and other skin affections, and in the form of a 5 to 10 p.c. alcoholic solution for seborrhœa capitis, and in lichen planus.—Y.B.P. '02, 177.

The Sodium salt of the above is also known commercially.

**QUINAPHTHOL** (Quinine Beta-naphthol-sulphonate).—A yellow crystalline powder, sparingly soluble in Water and in Alcohol.

Recommended as an intestinal antiseptic. Useful in typhoid. P.J. '97, ii. 83.

**Dose.**—8 to 10 grains = 0·52 to 0·65 grammes, three or four times a day.

**Sodium-Naphthol** (**Microcidin**) readily soluble in Water, **Hydronaphthol**, **Lactonaphthol** (**Lactol**), and **Naphthol Camphor** have also been introduced as possessing similar antiseptic properties to Naphthol; **A-Oxynaphthoic Acid** forms soluble salts with alkalis, which are antiseptics.

### Not Official.

#### NICKEL.

A metal closely allied to Cobalt, with which it is generally associated in minerals. Commercially it is largely contaminated with Copper, Iron, and sometimes Cobalt. Alloyed with Copper and Zinc, it forms **German silver**. Easily soluble in mineral acids, forming salts of a characteristic green colour.

**NICCOLI BROMIDUM**.—Green, hygroscopic crystals, soluble in Water, Alcohol, and Ether.

Sedative. Recommended in epilepsy.

**Dose.**—1 to 5 grains = 0·06 to 0·32 grammes.

In solution, or in pills.

**SYRUPUS NICCOLI BROMIDI**.—Granulated Nickel, 137 grains; Bromine, 377 grains; Water, 12 fl. oz.; digest them in a pint flask at a gentle heat until reaction ceases, filter, add Sugar, 24 oz., and sufficient Water to make 32 fl. oz.

Each fluid drachm contains 5 grains of Nickel Bromide, which is an average dose.—A.J.P. '86, 592.

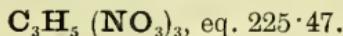
**NICCOLI SULPHAS.**—Greenish-blue crystals, readily soluble in Water.

**Dose.**— $\frac{1}{2}$  to 1 grain two or three times a day in chlorosis; is best given on a full stomach, as on an empty one it is apt to produce nausea. In somewhat larger doses it has also been given in locomotor ataxy.

### Not Official.

### NITROGLYCERIN.

*Syn.*—GLYCERYL TRINITRATE; GLONOIN; TRINITRIN;  
TRINITRO-GLYCERIN.



When pure it is a heavy, colourless, odourless, oily liquid. Sp. gr. 1.6. Explodes violently on percussion, and under some circumstances spontaneously. It solidifies at 46° F., and is then more dangerous to handle.

A 10 p.c. solution in Alcohol is commercial, and is used in making the Tabellæ.

**Solubility.**—Very slightly soluble in Water; readily in Alcohol (90 p.c.); mixes with Ether and with Chloroform.

**Medicinal Properties.**—Chiefly given for angina pectoris associated with aortic disease, spasmotic asthma and the dyspnoea of acute bronchitis; and in headache, neuralgia or hemicrania if associated with pallor. It reduces arterial tension in chronic Bright's disease and acts as a diuretic and diminishes the albuminuria. Chemically, it is a Nitrate, but its physiological action resembles the Nitrites. It is similar to that of Amyl Nitrite, but its action is slower and more prolonged.

In optic atrophy, *M.A.* '95, 261; in neuralgia and sciatica, in uræmic dyspnoea, in all forms of vomiting.—*M.P.* liv. 515; *M.A.* '95, 37, 445, 497, 520; *Pr. li.* 140; in arterio-sclerosis, *T.G.* '93, 736; in warding off, and (hypodermically) during paroxysm of epilepsy, *B.M.J.E.* '93, ii. 32; in gall-stone colic, *L.* '96, i. 353.

**Dose.**— $\frac{1}{200}$  to  $\frac{1}{50}$  grain = 0.0003 to 0.0013 gramme, the average dose being  $\frac{1}{100}$  grain = 0.0006 gramme.

**Prescribing Notes.**—The Solution may be given on Sugar, or in the form of Tablets, or diluted with Water.

**Official Preparations.**—Liquor Trinitrini and Tabellæ Trinitrini.

**Not Official.**—Haustus Nitro-Glycerini vel Trinitrini, Solution of Trinitrini, and Tabella Nitroglycerini Composita.

**Antidotes.**—Ergot, Atropine, Strychnine, cold applications to the head.

### Official Preparations.

**LIQUOR TRINITRINI.** SOLUTION OF TRINITRIN. *B.P.*  
*Syn.*—SOLUTION OF NITROGLYCERIN.

Trinitroglycerin of commerce,  $17\frac{1}{2}$  grains; Alcohol (90 p.c.), q.s. to yield 4 fl. oz. (1 in 100)

1 minim contains  $\frac{1}{100}$  of a grain.

**Dose.**— $\frac{1}{2}$  to 2 minims = 0·03 to 0·12 c.c.

In severe cases of angina pectoris or asthma, the dose is sometimes increased.

**Official** in Dutch (Solutio Nitroglycerini), 1 in 100; U.S. (Spiritus Glonoini), 1 in 100.

**TABELLÆ TRINITRINI. TRINITRIN TABLETS. B.P.  
Syn.—TABLETS OF NITROGLYCERIN.**

These tablets, made of chocolate, now weigh 5 grains instead of the  $2\frac{1}{2}$  grains in B.P. '85, but they contain as formerly  $\frac{1}{100}$  of a grain = 0·0006 grammes, of Trinitroglycerin.

**Dose.**—1 or 2 tablets.

**Not Official.**

**HAUSTUS NITRO-GLYCERINI VEL TRINITRINI.**—Solution of Trinitrin, 1 minim; Spirit of Chloroform, 15 minims; Compound Tincture of Cardamoms, 20 minims; Water to  $\frac{1}{2}$  oz.—*City Chest.*

Solution of Trinitrin, 1 minim; Spirit of Chloroform, 5 minims; Tincture of Capsicum, 2 minims; Peppermint Water to  $\frac{1}{2}$  oz.—*Westminster.*

**TABELLA NITROGLYCERINI COMPOSITA.**—Nitroglycerin,  $\frac{1}{100}$  grain; Amyl Nitrite,  $\frac{1}{4}$  grain; Menthol,  $\frac{1}{50}$  grain; Capsicin,  $\frac{1}{100}$  grain; Theobroma Paste, q.s.—*Westminster.*

**Not Official.**

**NUCLEIN. NUCLEOL.**

The nucleins are compounds of simple proteids with phosphorised bodies, and occur in Yeast, Milk, Yolk of Egg, Thyroid and Thymus glands, etc. Numerous varieties are supposed to exist. Nuclein is extracted by digestion with Pepsin and dilute Hydrochloric Acid, and purification of the residue by repeated solution and precipitation in dilute alkali and dilute acid respectively.

Nuclein is the best known chemical constituent of the nucleus of the white blood corpuscles.

**NUCLEIC OR NUCLEINIC ACID.**—A white or greyish-white amorphous powder, slightly soluble in Water, insoluble in Alcohol (90 p.c.), and in Ether. It is readily soluble in solutions of Sodium or Potassium Hydroxides with the formation of the corresponding Nucleinates, and it is in the form of 5 p.c. aqueous solutions of these salts that it is chiefly used medicinally.

**Medicinal Properties.**—A powerful germicide. Stated to possess nutritive properties, and to be useful in increasing the resisting power of the system to pathogenic germs. It has been

employed in the treatment of tuberculosis, in anaemia, and in neurasthenia. It has also been employed in diphtheria, and puerperal and scarlet fevers.

**Prescribing Notes.**—*It may be administered hypodermically in the form of a sterilised 5 p.c. solution, dose 16 minims = 1 c.c., or by the mouth as a solution of similar strength, in doses of 1 to 2 fl. drm. = 3·6 to 7·1 c.c.*

**ARGENTI NUCLEINAS** (Nargol).—A light brownish-yellow powder, containing about 10 p.c. Silver, soluble 1 in 4 of Water. Used as an injection,  $\frac{1}{4}$  to 1 p.c. solution, in gonorrhœa.—*B.M.J.* '01, ii. 1333; *L.* '01, ii. 1809; *M.A.* '02, 701.

**CUPRI NUCLEINAS** (Cuprol).—A green, odourless, impalpable powder, soluble in Water. Its solution is stated not to coagulate albumen. Has been found useful in powder form in cases of trachoma. Also as a 5 to 10 p.c. aqueous solution in conjunctivitis. Is stated to be less irritating than the Sulphate.—*L.* '01, ii. 729, 1809.

**FERRI NUCLEINAS** (Triferrin. Ferrinol).—A brown, amorphous, odourless powder, soluble in Water. Has been recommended in anaemia.—*B.M.J.E.* '02, i. 104; ii. 16, 104; *C.D.* '02, i. 580.

**Dose.**—5 grains = 0·32 grammes.

**HYDRARGYRI NUCLEINAS** (Mercurol).—A pale yellowish-brown, amorphous powder, soluble 1 in 5 Water, insoluble in Alcohol (90 p.c.). Its solution does not coagulate albumen. It has been used as a 2 p.c. injection in urethritis.—*L.* '00, ii. 871. As an antiseptic in the form of a  $2\frac{1}{2}$  to 5 p.c. solution in the treatment of diseases of the nose and ear.—*L.* '00, ii. 1726; *T.G.* '01, 92. Given with success in the treatment of syphilis, in average doses of 2 grains three times a day.—*L.* '01, ii. 1039. In gonorrhœa as an injection in the form of a 2 p.c. solution.—*T.G.* '01, 15. Has been found useful in combination with Chloretoe and Boric Acid in the treatment of various acute and chronic affections of the skin and mucous membranes.—*T.G.* '01, 636.

**SODII NUCLEINAS.**—A white or greyish-white amorphous powder, soluble in Water. Employed medicinally, as above described, in the form of a 5 p.c. solution.

## NUX VOMICA.

### NUX VOMICA.

The dried ripe Seeds of *Strychnos Nux-vomica*.

Imported from India, Ceylon, and Cochin China.

The chief source of Strychnine and Brucine.

**Medicinal Properties.**—In small doses it acts as a general tonic. In the form of Extract, Fluid Extract, or Tincture, it is recommended in atonic dyspepsia and chronic gastric catarrh, and in debilitated conditions of

the alimentary canal. It stimulates peristalsis, and therefore is a frequent and valuable ingredient in medicines for chronic constipation. It is also a cardiac and respiratory stimulant. Useful in paralysis of reflex origin, in peripheral paralysis due to alcohol, lead, tobacco, or to diphtheria; in all chronic paralytic affections, except those in which there is organic lesion of nerve-centres or inflammation of brain or spinal cord.

A report on eight cases of chronic pulmonary tuberculosis, treated with a 'simple mixture of nux vomica, gentian and acid,' compared with similar cases treated with 'Malt and Oil,' results compare most favourably.—*L.* '03, ii. 1016.

**Dose.**—In powder 1 to 4 grains = 0·06 to 0·26 grammes.

*Ph. Ger.* maximum single dose, 0·1 gramme; maximum daily dose, 0·2 gramme.

**Prescribing Notes.**— $\frac{1}{3}$  grain Strychnine is contained in  $1\frac{1}{2}$  grains of Extract,  $5\frac{1}{2}$  minims of Fluid Extract, 38 minims of Tincture.

**Official Preparations.**—Of the seeds, Extractum Nucis Vomicae Liquidum and Strychnina; of the Liquid Extract, Extractum Nucis Vomicae and Tinctura Nucis Vomicae.

**Not Official.**—Brucine.

**Antidotes.**—Emetic of Zinc Sulphate, Mustard, or Ipecacuanha, or hypodermic injection of Apomorphine; Animal Charcoal; Potassium Bromide or Chloral; Amyl Nitrite inhalations; Chloroform or Ether to relax the muscles; hypodermic injection of Curare.—*Murrell.*

**Official in Austr., Belg., Dan., Dutch, Fr. (Noix Vomique), Ger., Hung., Ital., Jap., Mex., Norw., Port., Span., Swed., Swiss and U.S.**

### EXTRACTUM NUCIS VOMICÆ. EXTRACT OF NUX VOMICA.

Prepared from Liquid Extract of Nux Vomica, and readjusted by means of Milk Sugar to contain 5 p.c. of Strychnine.

**Dose.**— $\frac{1}{4}$  to 1 grain = 0·016 to 0·065 grammes.

*Ph. Ger.* maximum single dose, 0·05 gramme; maximum daily dose, 0·10 gramme.

Often prescribed with Aloes and Ipecacuanha.

This Extract is intended to be about two-thirds the strength of that in B.P. 1885. *Ph. Ger.* Extractum Strychni is standardised to contain 17·5 p.c. of total alkaloids, and is therefore rather stronger than B.P. 1885.

**Official in Austr., Belg., Dan., Dutch, Ger., Hung.; Russ., Swiss and U.S.** use 68 to 70 p.c. Alcohol; Fr., Ital., Mex. and

Span., 80 p.c.; Norw. and Swed., 65 p.c.; Port., 90 p.c.; Jap., 60 p.c. by weight.

### **EXTRACTUM NUCIS VOMICÆ LIQUIDUM.**

LIQUID EXTRACT OF NUX VOMICA.

A fluid prepared by percolation with Alcohol (70 p.c.), and standardised to contain 1·5 grammes of Strychnine in 100 c.c.

**Dose.**—1 to 3 minims = 0·06 to 0·18 gramme.

Official in Mex. and U.S.

### **TINCTURA NUCIS VOMICÆ.** TINCTURE OF NUX VOMICA. *N.O. Syn.—TINCTURA STRYCHNI.*

Liquid Extract of Nux Vomica, 2; Distilled Water, 3; Alcohol (90 p.c.), *q.s.* to yield 12.

It contains about 0·25 p.c. of Strychnine, and is about twice the strength of the B.P. 1885 Tincture.

**Dose.**—5 to 15 minims = 0·3 to 0·9 c.c.

*Ph. Ger.* maximum single dose, 1·0 gramme; maximum daily dose, 2·0 gramme.

Official in Austr., Dan., Ger., Ital., Jap., Norw., Russ., Swed. and Swiss, 1 in 10; Belg., Fr., Hung., Mex., Port. and Span., 1 in 5; prepared from the seeds. Dutch, 1 Extract in 100; U.S., 1 Extract in 50. All by weight, except U.S.

**STRYCHNINE.**—See STRYCHNINA.

Not Official.

**BRUCINE** ( $C_{23}H_{26}N_2O_4 \cdot 4H_2O$ ).—Colourless, transparent, monoclinic crystals, containing about 15 p.c. of Water, which quickly effloresce in dry air. Its salts are bitter, and most of them crystallisable.

**Solubility.**—But slightly soluble in Water; 1 in 20 of Alcohol (90 p.c.), 1 in 2 of Chloroform, with separation of the combined Water.

Brucine resembles Strychnine in its physiological action, but is weaker.

**Dose.**— $\frac{1}{10}$  to  $\frac{1}{2}$  grain = 0·006 to 0·032 gramme.

It possesses analgesic properties, in 5 p.c. solutions of the Sulphate or Nitrate applied locally.—*T.G. '85, 376; '86, 18.*

### **OLEA.**

In the British Pharmacopœia the term **Oleum** is applied to an Oil (whether expressed or distilled), as it is also in Austr., Dutch, Ger., Hung., Jap., Russ. and U.S. The other names for fixed and volatile Oils respectively are: Belg., **Oleum** and **Essentia**; Dan., Norw. and Swed., **Oleum** and **Aetheroleum**;

Fr., Huile and Huile Volatile; Ital., Olio and Essenza; Mex., Aceite and Aceite Volatil; Port., Oleo and Essencia; Span., Aceite and Esencia.

**Elæosaccharum.**—A title used in the Foreign Pharmacopœias to denote a trituration of an Essential Oil with Sugar. Austr., Dutch, Jap., Russ. and Swiss use 1 drop of the Oil to 2 grammes of Sugar; Belg., Dan., Ger., Norw., Swed., Oil 1 gramme, Sugar 50 grammes; they are all practically the same strength. Fr. (Oleosaccharures), and Ital. (Oleosaccari), Oil 1 gramme, and Sugar 20 grammes.

### Not Official.

#### OLEATES.

Some of these preparations have come into general use. They were originally made by dissolving the oxide of the metal, or an alkaloid, in an excess of Oleic Acid; but later Dr. Shoemaker proposed the method of precipitation by double decomposition between a salt of the base and Solution of Castile Soap (Sodium Oleate with a little Palmitate); Solution of Potassium Oleate may be used with advantage in place of the Solution of Castile Soap, when the pure Oleate is required. The Oleate can also be purified from Palmitate by solution in Petroleum Spirit.

The various Oleates will be found under the headings of their respective bases.

### OLIVÆ OLEUM.

#### OLIVE OIL.

A clear, pale yellow, or greenish-yellow, oily fluid, possessing a faint characteristic odour and bland oily taste.

It is expressed from the ripe Fruit of *Olea Europaea*.

Chiefly obtained from the south of Europe.

Adulteration of Olive Oil is very general, large quantities of Cotton Seed and other Oils being used for admixture.

On exposure to the air it is apt to become rancid, acquiring a disagreeable smell.

**Solubility.**—1 in 2 of Ether; partially in Alcohol (90 p.c.).

**Medicinal Properties.**—Nutritious and mildly laxative, demulcent in the form of emulsion; externally as a lubricant in massage, also as an emollient and protective for burns and certain cutaneous diseases. 4 to 8 fl. oz. daily, and also larger quantities, have been given in cases of gall stones. Has also been successfully given for ascarides, followed by a purge; used in laxative enemata, especially for intestinal obstruction. Valuable in corrosive poisoning. It is most extensively em-

ployed in pharmacy, in the preparation of certain liniments, ointments and plasters.

**Dose.**— $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 c.c., or more.

**Prescribing Notes.**—It may be given in capsules, or in emulsion: 1 oz. of Olive Oil with 180 grains of powdered Gum Acacia and Water to 2 oz. Olive Oil mixes well with Malt Extract. Heated to 120° to 140° C. in a small flask (plugged with cotton wool) for half an hour, it forms Oleum Asepticum or Sterilised Olive Oil. Almond Oil and Liquid Paraffin can be sterilised in a similar manner.

**Official Preparations.**—Used in the preparation of Emplastrum Ammoniaci cum Hydrargyro, Emplastrum Hydrargyri, Emplastrum Picis, Emplastrum Plumbi, Linimentum Ammoniae, Linimentum Calcis, Linimentum Cauphorae, Sapo Durus, Sapo Mollis, Unguentum Capsici, Unguentum Hydrargyri Compositum, Unguentum Hydrargyri Nitratis, and Unguentum Resinæ.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex. (Aceite de Olivo), Norw., Port. (Azeite), Russ., Span. (Aceite), Swed., Swiss and U.S.** Ger. and Russ. have also Oleum Olivarum Commune.

**Oleum Arachis.** *Syn.*—Earth-Nut, Ground-Nut or Pea-Nut Oil, the oil expressed from the seeds of *Arachis Hypogae*; Oleum Sesami, the oil expressed from the seeds *Sesamum indicum*; both are Official in the *Ind. and Col. Add.*, the former for India and the African, Eastern and Australian Colonies; the latter for India and the African, Eastern and North American Colonies, in which places they are Officially permitted to be used in place of Olive Oil in making liniments, ointments and plasters.

## OPIUM.

### OPIUM.

The milky exudation of *Papaver somniferum*, obtained by incision from the unripe Capsules, and inspissated by spontaneous evaporation.

**Opium in powder** should contain between 9½ and 10½ p.c. of Anhydrous Morphine.

The Extract and Tincture being standardised preparations, any suitable variety of Opium may be used in their manufacture.

**Medicinal Properties.**—As a hypnotic and sedative it is used in insomnia, excitement and delirium of whatever origin, including that of typhoid; as an analgesic to relieve all forms of neuralgic and abdominal pain, the pain of pleurisy, and of gastric ulcer and of cancer, the pain during the passage of biliary and renal calculi, and the after pains of labour; as a haemostatic in intestinal and pul-

monary haemorrhage; in diabetes; in full doses for acute peritonitis; in small doses along with other astringents in diarrhoea, dysentery and the early stages of cholera.

In aortic regurgitation it increases the peripheral blood supply, especially to the brain, it reduces the tendency to syncope, it relieves the angina, and the cardiac dyspnœa, but if the kidneys are affected it should not be given.

As an expectorant it is used, guarded by Ammonia, only where the mucous secretion is abundant and not thick or scanty.

As a diaphoretic, in form of Dover's powder, it is valuable in influenza and coryza.

As an antispasmodic, in puerperal convulsions, epilepsy, colic, severe forms of chorea and spasmodic asthma; in spasmodic urethral stricture.

Locally in the form of liniment, plaster, or fomentation, it is used in neuralgias, rheumatism, lumbago and sciatica.

To avoid impairment of digestion, and to obtain rapid action, it is given subcutaneously (as hypodermic injection of Morphine) in neuralgia and sciatica, near the seat of pain, also in angina pectoris, cardiac paroxysmal pain, and for the dyspnœa caused by intra-thoracic tumours.

In form of Morphine, or Lead and Opium, suppository it relieves rectal and genito-urinary and other pelvic pains, and is useful after operations on these regions. Opium is preferable to Morphine in peritonitis, enteritis, and other abdominal inflammations, on account of its direct anodyne and astringent effect on the bowel, and because of its more continued action it is preferable in delirium and other 'head symptoms.'

Its continued use impairs the appetite, digestion and intellect; that it is a cardiac depressant should always be borne in mind. Great caution should be exercised in giving Opium to infants and young children, as they are very susceptible to its action, and it is contra-indicated in the pain of chronic dyspepsia, in cases of coma with contracted pupil, in kidney diseases, in nursing females and plethoric persons, in cerebral hyperæmia, in alcoholic intoxication; in the last stages of bronchitis and pneumonia, or whenever the respiration is seriously embarrassed, it is a most dangerous remedy.

A valuable paper on the use of Morphine in cardiac diseases.—*L.* '98, ii. 1393.

**Dose.**— $\frac{1}{2}$  to 2 grains = 0.032 to 0.13 grammes.

*Ph. Ger.* maximum single dose, 0.15 gramme; maximum daily dose, 0.5 gramme.

**Prescribing Notes.**—*Powdered Opium can be made into pills with Alcohol (60 p.c.).*

*It is convenient to remember that  $\frac{1}{16}$  grain Morphine is contained in 1 grain of Powdered Opium, in  $\frac{1}{2}$  grain of Extract, in 15 minims of Liquid Extract or of Tincture, in 96 minims of Ammoniated Tincture of Opium, in 240 minims of Compound Tincture of Camphor.*

*Opium is frequently ordered in lotions, 20 to 60 minims of Liquid Extract or Tincture to the fl. oz. It is also prescribed with Lead Acetate and Lead Subacetate, but the result is a turbid liquid deficient in strength of Lead owing to the precipitation of Lead Meconate; Solution of Morphine Acetate being nearly the same strength as the Tincture, and mixing readily with Lead Lotions without precipitation, can advantageously be employed in its place.*

**Incompatibles.**—The Alkaline Carbonates, Lime Water, Salts of Lead, Iron, Copper, Mercury, and Zinc, Liquor Arsenicalis, and vegetable astringents.

**Official Preparations.**—Extractum Opii and Tinctura Opii; used in the preparation of Codeine and of Morphine; of the **Powdered Opium**, Emplastrum Opii, Pilula Plumbi cum Opio, Pulvis Cretæ Aromaticus c. Opio, Pulvis Opii Compositus, and Unguentum Gallæ c. Opio. Contained in Pilula Saponis Composita, Pulvis Kino Compositus, Pulvis Ipecacuanhæ Conpositus, and Suppositoria Plumbi Composita. Of the **Compound Powder**, Pilula Ipecacuanhæ cum Scilla; of the **Extract**, Extractum Opii Liquidum. Of the **Tincture**, Linimentum Opii and Tinctura Opii Ammoniata; contained in Tinctura Camphoræ Composita.

**Not Official.**—Aqua, Trochiscus, Unguentum, and Vinum, Opii, Solution of Bimeconate of Morphia (Squire), *Syn.* Liquor Meconicus, Meconii Periodicum, Liquor Opii Sedativus, Black Drop, Linimentum Opii Ammoniatum, Narceina, Narcotina, Papaverina, Stypticin, and Styptol.

**Antidotes.**—In case of poisoning by Opium the antidotes are, an emetic of 10 grains of Copper Sulphate, the stomach-tube, external stimulants, cold affusion, Ammonia to the nostrils, compelled exertion, and artificial respiration. Belladonna or hypodermic injection of Atropine should be used; Strychnine; Amyl Nitrite; Gelsemium; Potassium Permanganate. See also Morphinæ Hydrochloridum.

**Official in Austr., Belg., Dan., Dutch, Hung., Ital., Norw., Port. and Span., not less than 10 p.c.; Mex., 10 p.c.; Fr., Ger., Jap., Russ., Swed. and Swiss, 10 to 12 p.c.; U.S., 13 to 15 p.c.;** all calculated on dried Opium.

#### **EMPLASTRUM OPII. OPIUM PLASTER.**

Opium in very fine powder, 1; Resin Plaster, 9. (1 in 10)  
Anodyne to relieve local pain.

Official in Belg. and Mex., 1 Opium in 20; Fr., 3 Extract in

4; Port. and Span., 1 Extract in 10; Swiss, 1 Extract in 20; U.S., 1 Extract in 16.

### **EXTRACTUM OPII. EXTRACT OF OPIUM.**

An Aqueous Extract containing 20 p.c. of Morphine.

**Dose.**— $\frac{1}{4}$  to 1 grain = 0·016 to 0·065 grammes.

*Ph. Ger.* maximum single dose, 0·15 grammes; maximum daily dose, 0·5 grammes.

**Official in** Austr., Belg., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.

### **EXTRACTUM OPII LIQUIDUM. LIQUID EXTRACT OF OPIUM.**

Extract of Opium,  $\frac{3}{4}$ ; Distilled Water, 16; Alcohol (90 p.c.), 4.

Contains 1 grain of Extract =  $\frac{1}{5}$  grain Morphine, in 29 minims.

**Dose.**—5 to 30 minims = 0·3 to 1·8 c.c.

### **LINIMENTUM OPII. LINIMENT OF OPIUM.**

Tincture of Opium, 1; Liniment of Soap, 1. (1 in 2)

The addition of the Opium to the Soap Liniment renders it more useful in many cases of rheumatism and local pains.

### **PILULA SAPONIS COMPOSITA. COMPOUND PILL OF SOAP.**

Opium, in powder, 1; Hard Soap, in powder, 3; Syrup of Glucose (by weight), 1. (1 of Powdered Opium in 5)

**Dose.**—2 to 4 grains = 0·13 to 0·26 grammes.

**Official in** Belg. (Pil. de Cynéglosse), and Fr., 1 Extract in 10, Dan., about 1 in 7; Norw., 1 Opium in 7½; Span., 1 Extract in 11; Port. (Pilulas de Opio Comp.), 1 Extract in 10; U.S. (Pilula Opii), Powdered Opium 6½, Soap 2; Mex. has Pildoras pacificas, each containing 0·02 gramme of Opium with other ingredients.

### **PULVIS OPII COMPOSITUS. COMPOUND POWDER OF OPIUM.**

Opium, 3; Black Pepper, 4; Ginger, 10; Caraway Fruit, 12; Tragacanth, 1. (1 of Powdered Opium in 10)

1 of this powder with 3 of Syrup forms **Confectio Opii**, B.P.'85.

**Dose.**—2 to 10 grains = 0·13 to 0·65 grammes.

### **TINCTURA OPII. TINCTURE OF OPIUM. B.P. *Syn.*—LAUDANUM. N.O. *Syn.*—TINCTURA THEBAICA.**

Opium treated with equal volumes of Distilled Water and Alcohol (90 p.c.), and standardised to contain 0·75 gramme of Anhydrous Morphine in 100 c.c.

Contains  $\frac{1}{5}$  grain Morphine in 29 minims.

**Dose.**—5 to 15 minims = 0·3 to 0·9 c.c., for repeated administration; for a single administration, 20 to 30 minims = 1·2 to 1·8 c.c.

*Ph.Ger.* maximum single dose, 1·5 grammes; maximum daily dose, 5·0 grammes.

Official in Austr., Dan., Dutch, Ger., Hung., Ital., Norw., Russ., Swed., Swiss and U.S., 1 (powder) in 10; Belg., 1 in 11·9; Jap., 1 and 10; Span., 1 in 12; Fr., 1 Extract in 12; Mex., 1 in 8; Port., 1 Extract in 20. All by weight, except U.S.

**TINCTURA OPII AMMONIATA.** AMMONIATED TINCTURE OF OPIUM. The Scotch Paregoric.

Tincture of Opium, 3 fl. oz.; Benzoic Acid, 180 grains; Oil of Anise, 1 fl. dram.; Solution of Ammonia, 4 fl. oz.; Alcohol (90 p.c.), q.s. to yield 20 fl. oz.

Tincture of Opium is now used instead of Powdered Opium, Saffron is omitted, and Liquor Ammoniæ Fortis replaced by Liquor Ammoniæ.

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

Contains  $\frac{1}{5}$  grain Morphine in 32 minims.

**TINCTURA OPII BENZOICA.** *Vide TINCTURA CAMPHORÆ COMPOSITA.*

Other preparations containing Opium:—

	Proportion of Opium.
PILULA IPECACUANHÆ CUM SCILLA . . .	about 1 in 20
PILULA PLUMBI CUM OPIO . . .	1 in 8
PULVIS CRETÆ AROMATICUS CUM OPIO . . .	1 in 40
PULVIS IPECACUANHÆ COMPOSITUS . . .	1 in 10
PULVIS KINO COMPOSITUS . . .	1 in 20
SUPPOSITORIA PLUMBI COMPOSITA . . .	1 grain in each
TINCTURA CAMPHORÆ COMPOSITA . . .	$\frac{1}{4}$ grain in 1 fl. dram.
UNGUENTUM GALLÆ CUM OPIO . . .	1 in $13\frac{1}{3}$
	Proportion of Morphine salt.
INJECTIO MORPHINÆ HYPODERMICA . . .	1 in 20
LIQUOR MORPHINÆ ACETATIS . . .	1 in 100
LIQUOR MORPHINÆ HYDROCHLORIDI . . .	1 in 100
LIQUOR MORPHINÆ TARTRATIS . . .	1 in 100
SUPPOSITORIA MORPHINÆ . . .	$\frac{1}{4}$ grain in each
TINCTURA CHLOROFORMI ET MORPHINÆ COM- POSITA . . . . .	1 in 100
TROCHISCUS MORPHINÆ . . . .	$\frac{1}{5}$ grain in each
TROCHISCUS MORPHINÆ ET IPECACUANHÆ	$\frac{1}{6}$ grain in each

Not Official.

**AQUA OPII.**—Opium, in powder, 1; Water, 12; distil 6.

Occasionally employed in eye lotions. Aq. Opii, 1; Aq. Sambuci, 7.

**TROCHISCUS OPII.**— $\frac{1}{16}$  grain of Extract of Opium in each.

**Dose.**—1 to 6 lozenges.

U.S., Powdered Opium  $\frac{1}{13}$  grain in each.

**UNGUENTUM OPII.**—Extract of Opium, 1; Spermaceti Ointment, 9; rub the Extract with a small quantity of Water to a syrupy consistence, and mix with the Ointment. (1 in 10)

**VINUM OPII.**—Opium, in powder,  $1\frac{1}{2}$ ; Sherry, 20; macerate seven days, and filter. (1 of powder in  $1\frac{3}{4}$ )

Used as a collyrium, 1 to 16 of Water.

**Dose.**—10 to 40 minims = 0·6 to 2·4 c.c.

**Official in U.S.**, 1 (powder) in 10; Dutch Supp., 1 and  $8\frac{1}{3}$ ; Fr., 1 in 8; Belg., with aromatics, 1 Extract in 15, and without 1 strained Opium in 12; Jap. and Norw., 1 and 10; Port., 1 Extract in 20. All by weight, except U.S. Tinctura Opii Crocata, Sydenham's Laudanum: Austr., Ger., Hung., Russ. and Swiss, 1 in 10; Vinum Opii Aromaticum, Dutch and Jap., 1 in 10; Vinum Opii Crocatum, Norw. and Swed., 1 in 10; Vinum Thebaicum Crocatum, Dan. 1 in 10; Laudano Vino Composto, Ital., 1 in 10.

**SOLUTION OF BIMECONATE OF MORPHIA (Squire).** *Syn.*—**Liquor Meconicus.**—A purified Solution of Opium (introduced by Peter Squire in 1839), containing the whole of the alkaloids in their natural state of combination. It is now standardised to contain 1 p.c. of Morphine. The volatile and extractive matters, to which the unpleasant secondary effects of Opium have been attributed, are removed in the process of its manufacture.

The Solution of the same name inserted in the B.P. of 1885, though obviously intended to take its place, differed so widely from the original in its properties and method of preparation, that it was no substitute for it, and was deleted in 1898.

**Dose.**—5 to 30 minims = 0·3 to 1·8 c.c.

**MECONII PERIODIDUM.**—A preparation representing the alkaloids of the above preparation in combination with excess of Iodine, on the lines of the other Di-iodo-hydriodides.

**Dose.**— $\frac{1}{2}$  to  $\frac{1}{2}$  grain = 0·008 to 0·032 gramme.

**LIQUOR OPII SEDATIVUS (Battley)** has enjoyed a reputation for a long time as an anodyne and sedative superior to Tincture of Opium, but it is somewhat stronger.

**Dose.**—5 to 20 minims = 0·3 to 1·2 c.c.

**BLACK DROP.**—Acetum Opii Crocatum.

1 drop is equal to 4 drops of Tincture of Opium.

**Dose.**—1 to 8 minims = 0·06 to 0·5 c.c.

**LINIMENTUM OPII AMMONIATUM (B.P.C.).**—Liniment of Soap, 6; Compound Camphor Liniment, 6; Tincture of Opium, 6; Liniment of Belladonna, 1; Stronger Solution of Ammonia, 1; mix, and after standing a week, filter quickly.

**NARCEINA.**—In white, silky, acicular crystals; neutral, with a slightly bitter taste. Soluble in 375 parts of cold and in 220 of hot Water, also soluble in Alcohol; insoluble in Ether, and practically insoluble in Chloroform.

**Dose.**— $\frac{1}{2}$  to 1 grain = 0·032 to 0·065 grammes.

Under the title **Antispasmin**, a combination of Narceine-Sodium and Sodium Salicylate has been introduced as a hypnotic and sedative. **Dose.**— $\frac{1}{4}$  to 2 grains = 0·016 to 0·13 grammes.

Official in Belg., Fr. and Mex.

**NARCOTINA.**—Trimetric prismatic crystals, or in large, colourless, glistening needles, reaction neutral. Insoluble in Water; soluble in Ether, in boiling Alcohol, and in diluted Acids; insoluble in Solution of Potassium Hydroxide. It has no narcotic properties, and has therefore been called **Anarcotina**; it has been given, as a substitute for Quinine, as an antiperiodic in ague.

**Dose.**—1 to 3 grains = 0·06 to 0·2 grammes.

**COTARNINÆ HYDROCHLORIDUM** (*Stypticin*).—The hydrochloride of an oxidation product of Narcotine. A pale yellow, crystalline powder, soluble in Water and in Alcohol. Valuable in menorrhagia. Contra-indicated in threatened abortion.—*P.J.* '95, ii. 471; *B.M.J.* '96, ii. 17; *B.M.J.E.* '96, i. 7; '98, i. 71, 103.

In uterine haemorrhage and in haemorrhage during pregnancy, menopausal bleedings and post-puerperal haemorrhage. The drug failed almost entirely in all the cases of chronic metritis and endometritis.—*Pr. lxiii.* 441; *B.M.J.E.* '99, ii. 86.

**Dose.**— $\frac{1}{3}$  to  $\frac{1}{2}$  grain = 0·021 to 0·032 grammes, given in capsule, or by hypodermic injection.

It may also be prescribed as a 1 in 10 Tincture, made with Tincture of Cinnamon. **Dose.**—10 drops in Water four times a day.—*B.M.J.E.* '01, ii. 68.

Tablets, each containing 0·05 gramme =  $\frac{3}{4}$  grain, are also made.

**COTARNINÆ PHTHALAS** (*Styptol*).—A micro-crystalline powder, soluble in Water. Useful to arrest uterine haemorrhage. May be given in doses of  $\frac{3}{4}$  grain = 0·05 grammes, in powder or cachet.—*B.M.J.E.* '03, ii. 36.

**PAPAVERINA.**—White, crystalline needles, or colourless, trimetric prisms. Insoluble in Water; sparingly soluble in Alcohol and Ether. Strongly narcotic.

**Dose.**— $\frac{1}{2}$  to  $\frac{1}{3}$  grain = 0·0054 to 0·0216 grammes.

### Not Official.

### OREXIN.

#### CEDRARINE. PHENYL-DIHYDRO-QUINAZOLINE.

A whitish, amorphous powder, having a pungent taste, and having an irritating effect on the nostrils, inducing violent sneezing. Insoluble in Water.

**Dose.**—1 to 5 grains = 0·06 to 0·32 grammes.

**OREXIN HYDROCHLORIDE.**—In white needles, or as a white powder, soluble in Water and in Alcohol (90 p.c.), insoluble in Ether. Introduced as a tonic and stomachic. It has been found useful in anaemia, and in nervous dyspepsia. It is also stated to possess a stimulating effect on the appetite. This salt is being superseded by the Tannate.

**Dose.**—2 to 8 grains = 0·13 to 0·52 grammes.

**OREXIN TANNATE.**—A pale yellow, amorphous, odourless and tasteless powder, insoluble in Water; 1 in 50 of Alcohol (90 p.c.). Introduced as a gastric tonic. Useful in functional derangements of the stomach. In the anorexia of phthisis. It has been recommended as a prophylactic agent against sea-sickness, and also to control the obstinate vomiting following Chloroform narcosis. It is contra-indicated in hyperacidity of the stomach.—*L.* '00, i. 1020; *B.M.J.E.* '02, ii. 96; *M.A.* '00, 493; *P.J.* '03, i. 162.

**Dose.**—5 to 10 grains = 0·32 to 0·65 grammes, in form of a cachet, one or two hours before the commencement of a meal. It should not be prescribed with solutions containing Iron salts.

**Official in the Dutch Supp.**

### Not Official.

#### OVI ALBUMEN.

The liquid white of the Egg, *Gallus Bankiva var. domesticus* was Official in the B.P. '85, and now appears in the Appendix of the B.P. '98. It is a glairy, viscid, colourless, or pale yellowish liquid. It may be obtained in the solid state by cautious evaporation at a temperature below 50° C. It is employed as an antidote in cases of poisoning by Copper, Mercury or Silver salts, and for certain purposes of clarification.

Commercial dried Albumen is in thin, transparent flakes, which should be free from unpleasant taste or odour of putrefaction.

It is coagulated by heat, and is then rendered white, opaque and insoluble; in this condition it is employed Officially as a test for Pepsin.

By the action of the gastric juice or of Pepsin in weak Hydrochloric Acid solutions, Albumin is first converted into acid-Albumin or Syntonin, and finally into Peptone.<sup>1</sup>

A solution of Albumen is used as a means of proving the absence of Metaphosphoric Acid from Acidum Phosphoricum Concentratum.

The dried white is Official in Dan., Dutch Supp., Ger., Ital., Swed.; the liquid white in the Fr., Mex. and Port.; U.S. (Appendix).

**EIGONS.**—Alpha and Beta-Eigons are stated to be stable combinations of Iodine with Albumin and Peptone respectively, and the corresponding Brom-Eigons are similar preparations containing Bromine.

**$\alpha$ -EIGON** is a light, yellowish-grey powder, possessing a faint odour, insoluble in Water, soluble in solution of Sodium Hydroxide forming Sodium  $\alpha$ -Eigone. It contains about 20 p.c. Iodine. Employed internally, and used as a dusting powder. Introduced as a substitute for Iodoform and the Iodides; also used in veterinary practice.—*P.J.* '01, i. 702.

**Dose.**—5 to 10 grains = 0·32 to 0·65 grammes.

**$\beta$ -EIGON.**—A light, yellowish-brown powder, possessing a faint Peptone odour. Soluble in Water, on which account, and as it is stated to be readily assimilable, it has been employed for internal administration in derangements of the stomach.

The Bromine compounds have been employed as sedatives in doses of 10 to 15 grains = 0·65 to 1 gramme, three or four times daily.—*B.M.J.E.* '02, i. 47.

**IODALBACID.**—A yellowish, tasteless, odourless powder, soluble in Water. It is a combination of Iodine and Albumin, and is stated to be useful as a substitute for the alkaline Iodides.

**Dose.**—15 to 30 grains = 1 to 2 grammes.

**OVI VITELLUS.**—The yolk of the Egg of *Gallus Bankiva var. domesticus* was Official in B.P. '85, and now appears in the Appendix of the B.P. '98. It is Officially used in the preparation of Mistura Spiritus Vini Gallici, and is unofficially employed as an emulsifying agent.

**GLYCERITUM VITELLI (U.S.).**—Fresh yolk of Egg 9, Glycerin 11; rub the Yolk of Egg in a mortar with the Glycerin gradually added, and mix thoroughly.

**LECITHIN** (Choline Distearyl-glycerophosphate).—A translucent, yellow or yellowish-white, hygroscopic, waxy solid, which should be completely soluble in Chloroform. It is a phosphorised organic constituent contained in considerable proportion in the yolk of Egg, from which it is chiefly prepared. It has been employed in neurasthenia, in brain and nervous diseases, also in tuberculosis. It may be injected hypodermically in doses of  $\frac{1}{4}$  to 2 grains = 0·05 to 0·13 gramme, dissolved in sterilised oil.—*L.* '02, i. 392, 676, 687, 1119; *C.D.* '01, ii. 725; '02, ii. 155.

**Dose.**—1 to 5 grains given in the form of pill, granules, or as a confection.

#### Not Official.

#### OXYGEN.

A colourless, odourless, tasteless Gas, which has been condensed to a liquid at a very low temperature and under great pressure. It may be prepared in small quantities, by heating Potassium Chlorate mixed with half its weight of pure dry black Manganese Oxide, and subsequent purification of the Gas; but on the commercial scale it is generally prepared from pure dry air by absorption with caustic Baryta.

When employed medicinally, it is generally inhaled from bags connected with cast-iron cylinders furnished with gun-metal taps, containing 10, 20 and 40 cubic feet of compressed Gas.

*Ital.* requires that it shall be free from Carbonic Acid Gas, from Chlorine compounds, and from Ozone.

**Medicinal Properties.**—Useful in pneumonia, bronchitis, bronchial catarrh, asthma. It has also been employed in cases of poisoning by coal-gas, and Carbon monoxide. In the form of Hydrogen Peroxide it has been used in cases of Cyanide poisoning.

A case of acute double pneumonia successfully treated with Oxygen.—*L.* '01, ii. 840.

Case of fetid bronchorrhœa treated by inhalation for several hours daily.—*B.M.J.* '02, i. 509.

Treatment at the Oxygen Hospital of 88 cases of various skin diseases, including also 9 cases of consumption, of these 50 were discharged cured, and 13 were greatly relieved; in all the cases of consumption the disease was arrested.—*L.* '03, ii. 274.

**OZONE.**—Is an allotropic modification of Oxygen, produced by passing a silent discharge of electricity through Oxygen Gas. This Gas possesses a peculiar odour, somewhat suggestive of dilute Chlorine. It is a powerful oxidising agent. When present in the air in large quantities it frequently produces irritation of the mucous membrane.

**SODIUM PEROXIDE.**—A white, amorphous powder, which dissolves in Water with a hissing noise, the evolution of heat and formation of Hydrogen Peroxide. It is a powerful oxidising agent.

Under the names of **Biogen** and **Hopogan**, Manganese Peroxide and Magnesium Peroxide, have been prepared and introduced into commerce; they evolve Oxygen on contact with a dilute Acid.

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### OXYMEL. *See* MEL.

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### OXYMEL SCILLÆ. *See* SCILLA.

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Not Official.

### PANCREATIC ENZYMES.

Pancreatic juice has been found to possess four distinct properties: conversion of Starch, conversion of Proteids, emulsification of Fats, and curdling of Milk.

Each of these properties is attributed to a peculiar soluble ferment or enzyme.

The Enzymes of the pancreatic juice act only in neutral or alkaline solutions. Their action is suspended in feebly acid solutions, and when digested at 40° C. (104° F.) for an hour in a solution of Pepsin of the normal acidity of the stomach (equal to 0·2 p.c. Hydrochloric Acid), or when digested with gastric juice, they are destroyed. They are also destroyed in solution by heating to 71° C. (160° F.).

The various Pancreatic Solutions, Powders and Tablets are principally used to peptonise foods previous to being swallowed, but they are also given with food at the beginning of a meal. Pancreatin in pills (Keratin coated) has been given in certain cases of diabetes.

Trypsin acts slowly on solid albuminoid masses (boiled Egg-albumen), but with great rapidity on soluble albumens, such as the casein of Milk. It converts Albumens into Peptones and subsequently into bodies which are not proteids, Leucin, Tyrosin, etc. The activity of Trypsin increases gradually with the temperature up to 50° C. (122° F.), and rapidly diminishes up to 75° C., when the ferment is destroyed.

Pancreatic Diastase converts Starch into Dextrin and Maltose.

It is usually stated to be identical with the diastase of Malt, but it cannot be so, as it is found to be affected quite differently to the latter by acid and alkali. Diastase from either source acts most rapidly in solutions which are practically neutral. The Malt ferment is retarded by acid, but almost stopped by a very small quantity (about 0·1 p.c.) of alkali; the Pancreatic ferment, on the contrary, is retarded by alkali and almost stopped by a minute quantity of acid.

Emulsive Enzyme, fresh pancreatic tissue or pancreatic juice, emulsifies Fats, but it is very doubtful whether any extract or solution prepared from the pancreas has the same property.—*Sir W. Roberts.*

Foster states that pancreatic juice splits up neutral fats into their respective acids and Glycerin, but Roberts has failed to corroborate this with pancreatic tissue or pancreatic extract.

As both Pancreatic Diastase and Trypsin have been shown by Roberts to be destroyed in the stomach, they are useless for internal administration, but they are peculiarly well suited for peptonising, or artificially digesting, foods for the use of the sick.

### Official Preparation.

#### **LIQUOR PANCREATIS. PANCREATIC SOLUTION.**

A liquid prepared from the fresh pancreas of the Pig, from which fat and the external membrane have been removed.

It is Officially required to peptonise 40 times its volume of Milk (made alkaline) in one hour at 113° F. (45° C.).

The above resembles **LIQUOR PANCREATICUS** (Benger), which was introduced in 1879.

## Not Official.

**PANCREATINUM.**—Commercial Pancreatin is a mixture of the enzymes existing in the pancreas of the hog. It is a yellowish or greyish amorphous powder, slowly and almost completely soluble in Water, partially soluble in Alcohol. U.S. requires 1 of Pancreatin to peptonise 1430 of cow's Milk (made alkaline) in 30 minutes at 100° F. (38° C.).

**Official in Fr. and Mex., Pancreatin ; Dutch Supp. and U.S., Pancreatinum ; Ital., Pancreatina Medicinale.**

**Trypsin.**—Under this name a purified product is commercial as a yellowish powder, partially soluble in Water, insoluble in Alcohol.

**PEPTONISED MILK.**—A pint of Milk is diluted with 4 fl. oz. of Water and heated to 140° F. (60° C.).\* To this add two teaspoonfuls of Liquor Pancreatis and 20 grains of Sodium Bicarbonate. Place in a jug and cover with a 'cosey' to keep it warm. At the end of an hour, or rather more, boil the contents of the jug. The product can be used like ordinary Milk.

Peptonised Milk can also be prepared at about 60° to 65° F. Dilute a pint of Milk with half-a-pint of Lime Water, or with half-a-pint of Water containing 20 grains of Sodium Bicarbonate in solution; to this add three teaspoonfuls of Liquor Pancreatis. The mixture is set aside in a jug for three or four hours, by which time the Milk will have developed a slightly bitter taste and will be ready for use.

The bitter taste is well covered by Soda Water, or it may be warmed and sweetened for infants.

If it is used as soon as ready it need not be boiled, but if not it must be boiled to prevent the change proceeding far enough to render it unpalatable.

**Peptonising Powders and Tablets** are also used in place of the Liquor Pancreatis. The powders generally contain the Sodium Bicarbonate mixed with the Pancreatin, ready for use.

**PEPTONISED GRUEL.**—Gruel from wheaten flour, oatmeal, arrowroot, sago, pearl barley, pea or lentil flour, should be very well boiled and made thick and strong. It is then poured into a covered jug and allowed to cool to a lukewarm temperature. Liquor Pancreatis is then added, two teaspoonfuls to a pint of gruel. At the end of three hours the product is boiled and strained. The starch of the meal is converted into sugar, and the albuminoid matters are peptonised.

**PEPTONISED MILK-GRUEL.**—To a good thick Gruel, prepared from any of the above-mentioned farinaceous articles, while still hot, add an equal quantity of cold Milk; the mixture will be

\* If a thermometer is not at hand, the proper temperature may be obtained by boiling one-half of the mixture and adding it to the other half which is cold.

about 125° F. (52° C.). To each pint of this mixture add two teaspoonfuls of Liquor Pancreatis and 20 grains of Sodium Bicarbonate. Set aside in a warm place for two or three hours until a perceptible bitterness is developed and not longer, then heat to the boiling point and strain.

**PEPTONISED BEEF-TEA.**—Half-a-pound of finely minced lean beef is mixed with a pint of Water and 20 grains of Sodium Bicarbonate. This is simmered for two hours in a covered saucepan; the resulting Beef-tea is decanted off into a covered jug, the undissolved beef residue is then beaten up with a spoon into a pulp and added to the Beef-tea. When it has cooled down to about 140° F. (60°C.) a tablespoonful of the Liquor Pancreatis is stirred in. The mixture is kept warm for two or three hours and occasionally stirred. At the end of this time the contents of the jug are boiled briskly for two or three minutes and finally strained. Beef-tea prepared in this way is rich in peptone, and when seasoned with salt is scarcely distinguishable in taste from ordinary Beef-tea.

A concentrated preparation is supplied as **Peptonised Beef Jelly.**

**PEPTONISED NUTRITIVE ENEMATA.**—The enema may be prepared in the usual way with milk-gruel and beef-tea, and a dessertspoonful of Liquor Pancreatis should be added to it just before administration.

In the warm temperature of the bowel the ferment find a favourable medium for their action on the nutritive materials with which they are mixed.

It must be borne in mind that peptonised foods are very liable to change on keeping, and that fresh quantities should be prepared every twelve hours or they must be re-boiled.—*Sir W. Roberts, Lumleian Lectures, 1880.*

#### PANCREATISED FAT or PANCREATIC EMULSION.

Introduced in the treatment of consumption and other wasting diseases, by Dobell, and first made by Savory and Moore in 1867.

**Dose.**—From 1 to 4 fl. dram. = 3·6 to 14·2 c.c., mixed in Milk or Water, from one to four times in twenty-four hours.

#### Not Official.

#### PAPAIN.

*Syn.*—PAPAYOTIN.

A white, or whitish, amorphous powder, soluble in Glycerin. It is a digestive ferment extracted from Papaw Juice (*Carica Papaya*).

Papaw leaves contain an alkaloid **Carpaine**, the **Hydrochloride** of which is readily soluble in Water; it has been used as a heart tonic, and febrifuge.

Papain possesses a solvent action on animal proteids, and acts best in neutral or slightly alkaline solutions.

Some commercial Papains possess such activity in acid solution that they have been suspected of being admixtures containing Pepsin.

**Medicinal Properties.**—Its solution (5 p.c.) is stated to dissolve false membranes in croup and diphtheria, and to be a good application to ulcers and warty epitheliomatous growths.—*L.* '85, ii. 86; '87, ii. 164; *B.M.J.* '85, ii. 151; '88, i. 1296; *T.G.* '86, 406; *P.J.* (3) xv. 507; (3) xx. 227; *M.P.* '94, i. 633; *Pr.* li. 372; *B.M.J.E.* '93, ii. 39. Internally in gastric ulcer.—*L.* '94, i. 840; '95, i. 333. In atonic dyspepsia.—*L.* '95, i. 1050. In gastritis.—*B.M.J.E.* '93, ii. 36.

**Dose.**—2 to 10 grains = 0·13 to 0·65 grammes.

**Prescribing Notes.**—*May be given in cachets, mixture, or pills. A good pill may be made by using 'Dispensing Syrup' q.s. Given also in the forms of Elixir and Glycerole, in doses of one teaspoonful.*

Official in Dutch Supp., Papayotinum, also Succus Caricæ Papayæ Inspissatus.

## PAPAVERIS CAPSULÆ.

### POPPY CAPSULES.

The nearly ripe dried Fruits of the Opium Poppy, *Papaver somniferum*.

**Medicinal Properties.**—Similar to Opium, but much weaker and of uncertain strength. The decoction is used as a soothing anodyne fomentation.

**Not Official.**—Decoctum Papaveris, Syrupus Papaveris and Extractum Papaveris Liquidum.

Official in Austr., Belg., Dan., Dutch, Fr. (Pavot), Ger., Hung., Mex., Port., Russ., Span. (Adormidera), and Swiss.

### Not Official.

**DECOCTUM PAPAVERIS.**—Poppy Capsules, bruised, 2; Distilled Water, 30; boil ten minutes in a covered vessel, and strain; then pour over the contents of the strainer as much Distilled Water as will make up the strained product to 20. (1 in 10)

An external soothing application, applied warm.

Span., Infusion, 1 in 35.

**SYRUPUS PAPAVERIS (B.P. '85).**—36 of Poppy Capsules is exhausted with boiling Water, and the liquid evaporated to 60; this is treated with 16 of Alcohol (90 p.c.), and subsequently evaporated to 40, in which is dissolved 64 of Sugar.

**Dose.**—1 fl. dram. = 3·6 c.c.

(1 in nearly 2½)

On the average, 60 minims will equal 8 minims of Tincture of Opium.

**Official** in Austr., Dutch, Ger. and Russ., 1 in 10; Belg., Syr. Diacodii with alcoholic *extract* and simple syrup, 1 in 100; Dan., about 1 in 12; Fr., Sirop de Pavot Blanc, 1 of extract of Poppy in 100; Hung., Syr. Diacodii, 1 in 27; Ital. (Sciropo di Oppio), Extract of Opium, 1 in 1000; Mex. (Jarabe diacodio), 1 of Ext. Opii in 2000; Port., Xarope de Dormideiras, 1 in 13½; Span., Jarabe de Adormideras, 1 extract in 100.

**EXTRACTUM PAPAVERIS LIQUIDUM.**—The liquid obtained by the process for making the Syrup (previous to adding the Alcohol and the Sugar), 3; Alcohol (90 p.c.), 1; mix.

**Dose.**—30 to 60 minims = 1·8 to 3·6 c.c.

## PARAFFINUM.

Petroleum Oil and Shale Oil are mixtures of the hydrocarbons of the Paraffin series, some of which are Official under the names Paraffinum Durum, Paraffinum Liquidum, Paraffinum Molle. Hard Paraffin is obtained chiefly from Shale, the Liquid and Soft Paraffins from Petroleum.

### PARAFFINUM DURUM. HARD PARAFFIN.

A colourless, crystalline, wax-like solid, which is a mixture of several of the harder members of the Paraffin series. It is Officially required to melt at 130° to 135° F. (54·4° to 57·2° C.), and to have sp. gr. 0·82 to 0·94.

**Solubility.**—Insoluble in Water, sparingly soluble in Absolute Alcohol; 1 in 80 of Ether, sp. gr. 0·720; 1 in 140 of Ether B.P.

In B.P. '85 it was stated to be 'freely soluble in Ether,' which is altered in B.P. '98 to 'almost entirely soluble in Ether.'

The solubility in Ether (sp. gr. 0·720) depends upon the melting point of the Paraffin, a sample, m. p. 120° F., dissolved 1 in 40.

**Official Preparation.**—Unguentum Paraffini. Contained in Unguentum Creosoti and Unguentum Eucalypti.

**Not Official.**—Massa Paraffinum, and Vasogen.

**Official** in Belg., Dutch, Ger., Hung. and Russ., all Paraffinum Solidum (m.p. 74° to 80° C.); Fr. Paraffine (m. p. 44° to 65° C.); Jap. (m.p. 75°); U.S., Petrolatum Spissum (m.p. 45° to 51° C.).

### UNGUENTUM PARAFFINI. PARAFFIN OINTMENT.

Hard Paraffin, 3; Soft Paraffin, 7.

At first sight this would appear to be a definite formula, but Official permission is given to use either White or Yellow Soft

Paraffin, to suit the colour of the ingredients with which it may be mixed, and the proportions of the Paraffins may be varied to suit climate and temperature.

**Official Preparations.**—The **White** is used in the preparation of Unguentum Acidi Borici, Unguentum Acidi Carbolicum, Unguentum Acidi Salicylicum, Unguentum Glycerini Plumbi Subacetatis, Unguentum Hydrargyri Ammoniati, Unguentum Plumbi Acetatis, and Unguentum Plumbi Carbonatis. The **Yellow** is used in Unguentum Hydrargyri Oxidi Rubri, Unguentum Iodoformi, and Unguentum Plumbi Iodidi.

An Ointment is Official in Dutch Supp. and Ger.

### **PARAFFINUM LIQUIDUM. LIQUID PARAFFIN.**

A colourless, odourless and tasteless, transparent, oily fluid, which is Officially required to be 'not fluorescent,' and to have sp. gr. 0·885 to 0·890.

The lower limit has been fixed too high; many good samples have a much lower sp. gr., and some of them in good demand are as low as 0·865.

**Solubility.**—It mixes with Chloroform, Ether, and the fixed and volatile Oils. It dissolves Bromine, Iodine, Iodoform and Phosphorus.

**Medicinal Properties.**—It has been used, alone or mixed with Castor or Olive Oil, as an application in chronic eczema accompanied by desquamation. Has been used as a solvent or emulsifier for substances to be given hypodermically; also for use in sprays and atomisers.

Ordinary lamp Paraffin, applied with a camel's-hair brush to diphtheritic patches (after scraping).—*B.M.J.* '91, ii. 645; '01, i. 1645; '01, ii. 504, 838.

**Official in Belg.**, sp. gr. 0·840; **Dan.** and **Norw.**, sp. gr. 0·895 to 0·905; **Dutch**, sp. gr. 0·840 to 0·860; **Ger.** and **Russ.**, sp. gr. 0·880; **Mex.**, sp. gr. 0·875 to 0·890; **Swed.**, sp. gr. 0·88 to 0·90; **U.S.**, sp. gr. 0·875 to 0·945.

Paroleine, Oleum Deelinæ, Oleum Adepsine Alb., Glymol, Vaseline Oil, Chrismaline, are forms of Liquid Paraffin.

### **Not Official.**

**EMULSIO PETROLEI CUM HYPOPHOSPHITIBUS (B.P.C.).**—Mix in a mortar Liquid Paraffin, 8 fl. oz.; Gum Acacia, in powder, 4 oz.; Cinnamon Oil, 24 minimis; Tragacanth, in powder, 120 grains. Add in one quantity, 6 fl. oz. of Water, and emulsify completely; add Calcium Hypophosphate and Sodium Hypophosphate of each 192 grains, dissolved in 4 fl. oz. of Water, and finally sufficient Water to produce 24 fl. oz.

**PARAFFINUM MOLLE.** SOFT PARAFFIN.

A semi-solid translucent substance, melting between 96° and 104° F. (35.5° to 40° C.). Either the white or the yellow variety may be used, according to circumstances.

Vaseline, Adepsine, Salvo Petrolia, Chrisma, and Cosmoline are forms of Soft Paraffin.

**Solubility.**—Insoluble in Water, slightly soluble in Absolute Alcohol, freely in Ether, Chloroform, Benzol, Oil of Turpentine, the fixed and volatile Oils.

Sterilised Paraffin Ointment, having a melting point 97° to 104° F. (36.1° to 40° C.), used by hypodermic and submucous injection to remove deformities from loss of tissue; the Paraffin is not absorbed, but becomes encapsulated.—*B.M.J.E.* '01, ii. 47; *T.G.* '02, 45; *B.M.J.* '02, i. 1078, 1839; *B.M.J.E.* '03, i. 63; *L.* '02, i. 228; '02, ii. 327, 351, 1467, 1694; *Pr. lxx.* 101.

Restoration of the inferior turbinate body by Paraffin injections in the treatment of atrophic rhinitis.—*L.* '03, i. 168.

Injection of sterilised Paraffin after enucleation of the eyeball.—*L.* '03, i. 299.

Two cases of prolapsus of the bowel and one of the uterus treated by hypodermic injection.—*L.* '02, ii. 409; '03, i. 799; *B.M.J.* '03, i. 669.

Description of a syringe suitable for making hypodermic injections.—*L.* '03, ii. 611; *B.M.J.* '03, ii. 741.

**Official Preparations.**—Unguentum Paraffini. The **White** is used in the preparation of Unguentum Creosoti, Unguentum Eucalypti and Unguentum Zinci Oleatis. The **Yellow** in Unguentum Hydrargyri Nitratis Dilutum and Unguentum Hydrargyri Oxidi Flavi.

**Official in Austr., Dan., Jap., Norw., Swed. and Swiss, Vaselineum; Belg., Paraffina Mollis; Dutch, Vaselinum Album and V. Flavum; Fr., Pétroleine; Ger. and Russ., Unguentum Paraffini; Hung., Ital. and Span., Vaselinea; Mex., Vaselina Solida; U.S., Petrolatum Molle.**

**Not Official.**

**MASSA PARAFFINUM.**—Hard Paraffin (m.p. 120° F.), 1; Soft Paraffin,  $1\frac{1}{2}$ ; melt together.

A good mass for making Silver Nitrate and Potassium Permanganate into Pills.

**VASOGEN** (Oxygenated Vaseline. Valsol).—A yellow, or dark brown, thick oily liquid which forms with Water a stable white emulsion. It has been introduced as a basis for various medicated preparations, e.g. Creosote-Vasogen (5 and 20 p.c.), Ichthyol-Vasogen (1 p.c.), Iodine-Vasogen (6 and 10 p.c.), Iodoform-Vasogen (15 p.c.), and Menthol-Vasogen (2 p.c.).

A mixture of Vaseline Oil and Oleic Acid, when saturated with Ammonia, yields a similar preparation to Vasogen.—*Proc. Amer. Pharm. Assoc.* xliii. 632; *P.J.* '02, ii. 249.

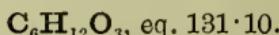
A brown fatty solid is also known under the name of *Vasogenum Spissum*.

**PETROLEUM SPIRIT.** *Syn. PETROLEUM ETHER.*—Now appears in the Appendix of the B.P. '98, and is there described as ‘a colourless, very volatile and highly inflammable liquid. Sp. gr. 0·670 to 0·700, boiling point 120° to 140° F.,’ and is used as a solvent; the Petroleum Ether for use in conjunction with Methylated Ether (sp. gr. 0·717) for the production of local anaesthesia, has a much lower sp. gr. (0·640), and boils at a much lower temperature.

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## PARALDEHYDUM.

### PARALDEHYDE.



A colourless, transparent Liquid, having a peculiar characteristic, not unpleasant ethereal odour, and a pungent and subsequently a cool taste. At a temperature of about 0° C. it solidifies to a crystalline mass, which melts at about 10° C. (50° F.).

It should be kept in amber-coloured, stoppered bottles, and in a cool atmosphere.

Paraldehyde not answering the Official requirements can generally be brought up to the standard by washing with Water containing an excess of Sodium Bicarbonate to remove acidity, and then dehydration over dried Potassium Carbonate. If the melting point be very low it should first be redistilled and the first tenth rejected.

**Solubility.**—1 in 8½ of Water at 60° F., the solution becoming very turbid on warming. It is miscible, in all proportions, with Alcohol (90 p.c.) and with Ether.

**Medicinal Properties.**—Hypnotic. Produces quiet and refreshing sleep more speedily than Chloral; does not depress the heart’s action. Has a marked action on the kidneys, increasing the flow of urine. It does not give rise to headache. Is a valuable remedy in the insomnia of cardiac disease, of mania, melancholia, and of other mental diseases.

Paraldehyde is given off by the lungs, and may be detected in the breath twelve or more hours after having been taken.

30 minim doses every half or one hour in spasmodic asthma.—*B.M.J.* '93, i. 65; '96, i. 725; *L.* '99, i. 756.

In 1 to 1½ fl. dram. doses, one of the most potent remedies in spasmodic asthma.—*Scot. Med. and Surg. Journ.* '99, 418.

One of the best and safest drugs for use as a narcotic in the treatment of mental diseases.—*L.* '02, i. 1539.

Cases of habit have been recorded. Over-doses have occasionally produced epileptiform convulsions, but muscular relaxation and deep stupor are more frequent.—*L.* '08, i. 1023.

Sometimes useful in the sleeplessness of patients suffering from Bright's disease.—*Pr.* lxvii. 658.

Case of poisoning by 1 oz. of pure Paraldehyde given in mistake for a diluted preparation; recovery.—*L.* '02, ii. 673.

**Dose.**— $\frac{1}{2}$  to 2 fl. drm. = 1·8 to 7·1 c.c.

*Ph.Ger.* maximum single dose, 5·0 grammes; maximum daily dose, 10·0 grammes.

**Prescribing Notes.**—*May be taken dissolved in 1 to 2 fl. oz. of Water. A small dose repeated in an hour is more effective than a large dose. It is very pungent; when prescribed in mixture it should be diluted 1 to 16 of Water. The flavour is disagreeable and difficult to cover; Tincture of Orange and Cinnamon Water are the best for this purpose. When larger doses than will dissolve are required in mixtures, Compound Tragacanth Powder should be ordered to diffuse it. It is also prescribed in capsules.*

*It has been stated (P.J. '01, i. 559) that when Potassium Bromide and Paraldehyde are prescribed together in Water, that Potassium Bromate is formed, but we dissolved 3 grammes of Potassium Bromide and 4 grammes of Paraldehyde in 150 grammes of Distilled Water, and on keeping over a month the Bromine titrated its full strength.*

**Not Official.**—Metaldehyde, and *Mistura Paraldehydi*.

**Official in Dan., Dutch Supp., Fr., Hung., Ger., Ital., Mex., Norw., Russ. and U.S.**

**Not Official.**

**MISTURA PARALDEHYDI.**—Paraldehyde 1 fl. drm., Glycerin 40 minims, Rectified Spirit 2 fl. drm., Cinnamon Water to 1 fl. oz.

**Metaldehyde**, which is also a polymer of Ethylic Aldehyde, occurs in colourless acicular crystals, and was at one time said to be a hypnotic in doses of 2 to 8 grains, but this is doubtful.

## PAREIRÆ RADIX.

PAREIRA ROOT.

The dried Root of *Chondrodendron tomentosum*.

Under the title of **Cissampelos**, the dried Root of *Cissampelos Pareira*, is Official in the *Ind. and Col. Add.* for India, and the Eastern Colonies; also **Decoctum Cissampeli** (1 in 8), dose  $\frac{1}{2}$  to 2 fl. oz. = 14·2 to 56·8 c.c.; and **Extractum Cissampeli Fluidum** (1 in 1), dose 30 to 120 minims = 1·8 to 7·1 c.c.

Imported from Rio Janeiro in South Brazil. A spurious Pareira has lately been imported from Bahia in North Brazil, much inferior in alkaloid and extractive. The most marked

chemical difference between the two is in the Petroleum Ether Extractive. In the genuine drug this amounts to over 8 p.c., and in the spurious to about 0·3 p.c.—*P.J.* (3) xxii. 703, 771.

A good deal of the stem, which closely resembles the root, is also imported, and is said to be much less efficacious. Several drugs have been sold at different times as Pareira Brava.

**Medicinal Properties.**—Tonic and diuretic in catarrhal affections of, and discharges from, the genito-urinary passages, such as gonorrhœa and leucorrhœa; sedative and astringent in chronic cystitis.

**Official Preparation.**—Extractum Pareiræ Liquidum.

**Official in Mex. and Port., Butua; U.S.**

### **EXTRACTUM PAREIRÆ LIQUIDUM. LIQUID EXTRACT OF PAREIRA.**

Pareira Root exhausted with boiling Distilled Water, the liquid evaporated until it contains  $33\frac{1}{3}$  p.c. by weight of solid extract, then mixed with  $\frac{1}{3}$  of its volume of Alcohol (90 p.c.).

It is now made direct from the Root instead of from the Extract.

**Dose.**— $\frac{1}{2}$  to 2 fl. drm. = 1·8 to 7·1 c.c.

**Incompatibles.**—Ferric salts, Lead salts, Tincture of Iodine.

**Official in U.S.,** 1 in 1 with Glycerin.

### **PEPSINUM.**

#### **PEPSIN.**

An enzyme obtained from the mucous lining or the glandular layer of the fresh stomach of the healthy pig, sheep, or calf.

A fine white or yellowish white amorphous powder, or thin pale yellow or yellowish translucent grains or scales, without any odour of putrescence, and having a slightly acidulous or saline taste, followed by a suggestion of bitterness. It slowly absorbs moisture when exposed to the air.

*B.P.* requires it to dissolve 2500 times and *U.S.P.* not less than 3000 times its own weight of freshly coagulated and disintegrated egg-albumen.

**Solubility.**—Soluble about 1 in 100 of Water, more soluble in Water acidulated with Hydrochloric Acid. Insoluble in Alcohol (90 p.c.).

*B.P.* states that Pepsin is soluble 1 in 100 of Alcohol (90 p.c.), but this can only apply to the 500-test Pepsin of *B.P.* '85,

because it consists principally of Sugar of Milk and not Pepsin. It is not true of Pepsin, B.P. '98.

**Medicinal Properties.**—A digestive adjuvant; preferably given with dilute Hydrochloric Acid; used in chronic gastric catarrh, with deficiency of gastric juice or excessive secretion of mucus; in irritability of stomach associated with vomiting and gastralgia. Externally, to stimulate indolent ulcers, and in eczema; in the form of a bougie for gonorrhœa.

**Dose.**—5 to 10 grains = 0·32 to 0·65 grammes.

**Prescribing Notes.**—*Given in powders, or in pills with Dispensing Syrup, also in cachets, capsules, and compressed tablets.*

**Official Preparation.**—Glycerinum Pepsini.

**Not Official.**—Pepsinum Saccharatum, Vinum Pepsini.

The usual solvent for making fluid preparations of Pepsin is a weak Alcohol acidulated with Hydrochloric Acid, to which Glycerin is added.

Alcoholic media are stated to be unsuitable vehicles for pharmaceutical preparations of Pepsin, as even dilute Alcohol in time destroys its activity.—*L. '02, i. 687; P.J. '02, i. 294.*

Pepsin is one of the soluble ferments or enzymes of the gastric juice. It dissolves natural proteids, albumens, and fibrin, and converts them into syntoin and subsequently into albumose and Peptone. It is a conversion of the less soluble proteids into those which are more so, Peptone being the most soluble and diffusible of the proteids. Pepsin has no action on starch.

It acts only in acid solution, 0·2 p.c. of Hydrochloric Acid being the most favourable.

The action of Pepsin will continue almost indefinitely if the products of its action are removed by dialysis, or if the concentration of the products is reduced by acidified water.

The gastric juice also contains another enzyme 'rennin,' which curdles milk. The curd is formed in acid or neutral solutions in the presence of Calcium Phosphate. The casein is split up into a soluble and an insoluble proteid, the latter of which entangles the fat and forms a curd.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

#### GLYCERINUM PEPSINI. GLYCERIN OF PEPSIN.

Hydrochloric Acid, 110 minims; Glycerin, 12 fl. oz.; Distilled Water, 6 fl. oz.; Pepsin, 800 grains; macerate for a week, filter and make up with Distilled Water to 20 fl. oz.

(1 in 11)

**Dose.**—1 to 2 fl. drm. = 3·6 to 7·1 c.c., corresponding to 5 to 10 grains = 0·32 to 0·65 grammes of Pepsin.

The Pepsin should be dissolved in the Water, the Glycerin added in three or four portions, with agitation, then the Acid, and finally made up to volume with Water, and filtered.—*P.J.* '04, i. 84.

### Not Official.

**PEPSINUM SACCHARATUM** (*Jap.* and *U.S.*).—Pepsin (of above strength), 1; Milk Sugar, 9.

**VINUM PEPSINI.** Pepsin Wine (*B.P.C.*).—Pepsin, 320 grains; Hydrochloric Acid, 2 fl. dram.; Glycerin, 1 fl. oz.; Sherry *q.s.* to yield 20 fl. oz.

It does not require a wine licence, as it is considered unfit for use as a beverage.

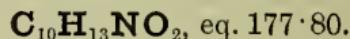
**Official** in Dutch Supp., Ger. and Russ., about 1 in 42.

**Ingluvin.**—An amorphous powder, prepared from the gizzard of the domestic chicken. Introduced as a substitute for Pepsin. A stomachic tonic for the relief of indigestion, flatulence and dyspepsia, and of special use in the vomiting of pregnancy.

**Dose.**—5 to 10 grains = 0·32 to 0·65 grammes.

## PHENACETINUM.

### PHENACETIN.



A white, odourless, almost tasteless, crystalline powder, or white glistening crystalline scales. It is produced by the interaction of Glacial Acetic Acid and Para-phenetidin.

**Solubility.**—1 in 1700 of Water; 1 in 50 of boiling Water; 1 in 21 of Alcohol (90 p.c.); 1 in 100 of Alcohol 60 p.c.).

**Medicinal Properties.**—Analgesic, antipyretic and nervine sedative. It does not produce nausea. It is an efficient synthetic analgesic for the relief of neuralgic, rheumatic, locomotor ataxial and other pains; and is the safest of the synthetic antipyretics, being the most free from toxic effects.

As the result of an enquiry as to the ill-effects of Phenacetin, by a Committee of the British Medical Association, it is stated that it appears to have a notable freedom from injurious action, and has great value, especially as an analgesic. Some observers recommend a commencing dose of 5 grains or less, others using doses of 8 to 10 grains.—*B.M.J.* '94, i. 89.

Two cases of temporary rash caused by Phenacetin without any other untoward result.—*L.* '95, i. 91; *C.D.* '95, i. 797.

Palpitation caused in an adult male by taking three 15-grain powders in  $3\frac{1}{2}$  hours.—*Pr.* li, 241; palpitation caused in a female

aged thirty-two by taking 5 to 8 cachets of 10 grains each in the twenty-four hours.—*Pr.* liii. 444.

A recent digest of the literature on synthetic analgesics by Taylor Grant (*Scot. Med. and Surg. Journ.* '98, iii. 436) shows that Phenacetin and Antipyrine are the most trustworthy and valuable of this class of pain-relieving remedies, and that, if used with due care and judgment, ill-effects following the use of either are exceedingly rare, the principal precaution being to commence with a small dose, of Phenacetin 5 grains and of Antipyrine not more than 10 grains.

Recommended in influenza to relieve the headache and reduce temperature.—*B.M.J.* '91, i. 1282; '91, ii. 190; '94, ii. 1045.

**Dose.**—5 to 10 grains = 0·32 to 0·65 grammes.

*Ph.Ger.* maximum single dose, 1·0 grammes; maximum daily dose, 3·0 grammes.

**Prescribing Notes.**—*It is given in cachets, or suspended in Water with Compound Powder of Tragacanth; in migraine it is usually given with Caffeine in effervescent granules.*

**Not Official.**—Phenacetinum cum Caffeina Effervescens, Amygdophenin, Eupyrine, Kryofin, Lactophenin, Malakin, Para-phenetidin Camphorates and Citrates, Phenosal, Triphenin, Phenocoll Hydrochloridum and Salocoll.

**Official in Austr.** Add., Dan., Dutch Supp., Ger., Norw., Russ., Swed. and Swiss; Fr., Acet-Phenetidine; Ital. and Mex., Fenacetina.

### Not Official.

**PHENACETINUM CUM CAFFEINA EFFERVESCENS (B.P.C.).**—Sodium Bicarbonate, 46; Tartaric Acid, 24; Citric Acid, 16; Refined Sugar, 16½; Phenacetin, 5; Caffeine Citrate, 2½; make into granules of a suitable size. (about 5 in 100)

**Dose.**—60 to 120 grains = 4 to 8 grammes.

**AMYGDOPHENIN** (Para-phenetidin Amygdalate).—A greyish-white, voluminous, crystalline powder, very sparingly soluble in Water. Anti-rheumatic and anti-neuralgic, but is of little value as an antipyretic.—*F.J.* '96, i. 139, 162; *B.M.J.E.* '95, ii. 99.

**Dose.**—8 to 15 grains = 0·52 to 1 grammes.

**CITROPHEN** (Para-phenetidin Citrate).—A white powder, with an acid reaction; soluble 1 in 165 of Water; 1 in 300 of Alcohol (90 p.c.); insoluble in Ether and in Chloroform. Antipyretic and analgesic, sometimes causes considerable sweating.

Has been found useful in rheumatism of the joints and muscles, for the relief of severe headache of influenza, and in acute tonsillitis.—*B.M.J.E.* '99, ii. 52.

**Dose.**—7½ to 15 grains = 0·5 to 1 grammes.

**Official in Dutch Supp.**

Citrophen is dibasic, and Polysin is monobasic, Para-phenetidin Citrate,

**Apolysin**, in yellowish-white crystals, or a crystalline powder, with an acid reaction; readily soluble in Water. Has been used as an antipyretic and analgesic.

**EUPYRINE** (Para-phenetidin-vanillin-ethyl Carbonate).—Pale, greenish-yellow crystals, insoluble in Water, readily soluble in Alcohol (90 p.c.), in Ether and in Chloroform. Introduced as an innocuous antipyretic.—*P.J.* '01, ii. 312; *C.D.* '01, i. 36.

**Dose.**—15 to 20 grains = 1 to 1·3 grammes.

**KRYOFIN** (Para-phenetidin Methylglycollate).—White, odourless, tasteless crystals, sparingly soluble in cold Water. Antipyretic and analgesic. Has been found useful in neuralgia. Severe sweating sometimes follows its use.—*B.M.J.E.* '97, i. 83; '97, ii. 88; *L.* '97, ii. 728; *P.J.* '97, ii. 5.

**Dose.**—8 to 15 grains = 0·52 to 1 gramme.

**LACTOPHENIN** (Para-phenetidin Lactate).—A white, inodorous, bitter, crystalline powder, melting at 118° C. Sparingly soluble in Water.

**Medicinal Properties.**—Antipyretic, analgesic and hypnotic. Used in migraine, erysipelas, nervous headache and the neuralgia of influenza.

**Dose.**—5 to 15 grains = 0·32 to 1 gramme.

**MALAKIN** (Para-phenetidin Salicylate).—Occurs in pale-yellow, silky needles, or a yellow, crystalline powder, insoluble in Water and strong Alcohol.

Antipyretic, analgesic and anti-rheumatic. Used in acute rheumatism, the fever of phthisis, migraine and neuralgia.—*M.P.* '94, i. 268; *B.M.J.E.* '93, ii. 92; '94, i. 84; '94, ii. 88; *T.G.* '95, 325; *Pr.* liii. 45; *Y.B.P.* '95, 89; *Y.B.T.* '95, 89; in every way inferior to Phenacetin and Antipyrine.—*B.M.J.* '98, ii. 1055.

**Dose.**—10 to 20 grains = 0·65 to 1·3 grammes.

**PARA-PHENETIDIN CAMPHORATE.**—A white, crystalline powder, insoluble in Water, soluble in Alcohol (90 p.c.). Introduced as an antipyretic and anti-diaphoretic.

**PHENOSAL** (Para-phenetidin Aceto-salicylate).—A white, odourless, crystalline powder, sparingly soluble in Water, in Alcohol (90 p.c.), and in Ether. Is stated to possess antipyretic and antineuritic properties.—*P.J.* '99, ii. 11, 62.

**Dose.**—5 to 10 grains = 0·32 to 0·65 grammes.

**Triphenin.**—A derivative of Para-phenetidin and Propionic Acid; dose, 8 to 15 grains. **Phesin**, a sulpho-derivative of Para-phenetidin, and **Pyrantin**, a derivative of Para-phenetidin and Succinic Acid, dose 5 to 10 grains, have been recommended as antipyretics. **Chinaphenin** (Para-phenetidin-quinine-ethyl Carbonate), dose 5 to 15 grains, and **Para-phenetidin Agarate** have recently been introduced as antipyretics.

**PHENOCOLL HYDROCHLORIDUM.**—A white, crystalline powder, soluble 1 in 16 of Water, sparingly soluble in Alcohol (90 p.c.). Obtained by the action of Glycocol on Phenetidin,

**Medicinal Properties.**—Antipyretic, yielding good results in rheumatic fever.—*L.* '91, i. 1060; '92, ii. 438. As a substitute for Quinine in malaria, *B.M.J.E.* '93, ii. 104, *T.G.* '93, 334, 618; in acute rheumatism, typhoid, malaria, and as an intestinal anti-septic, *B.M.J.E.* '94, i. 79; '96, ii. 83; *L.* '97, i. 1227; *P.J.* '96, i. 178; used in 400 cases of influenza during an epidemic, and found to be a specific.—*P.J.* '99, ii. 216.

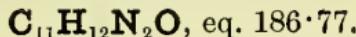
**Dose.**—5 to 10 grains = 0·32 to 0·65 grammes.

**Official in Dutch Supp.**

**Salocoll** (Phenocoll Salicylate), recommended in rheumatism in doses of 15 to 30 grains = 1 to 2 grammes. It is not so soluble in Water as the Hydrochloride.

## PHENAZONUM.

### PHENAZONE.



Colourless, odourless, crystalline scales, or as a white neutral odourless powder, possessing a somewhat bitter taste.

*B.P.* states that 'Phenazone is commonly known as Antipyrine,' but it is not very clear from this note whether it is intended that Phenazone should be used when Antipyrine is ordered, or that Antipyrine should be used when Phenazone is ordered, or whether it is an incidental note having no meaning.

**Solubility.**—1 in  $1\frac{1}{4}$  of Water; 3 in 4 of Alcohol (90 p.c.); about 5 in 6 of Chloroform; 1 in 40 of Ether.

**Medicinal Properties.**—Antipyretic and analgesic, nervine sedative. It will reduce temperature in all forms of febrile disease, but in weak subjects its depressant effect should be borne in mind.

As an analgesic it is used with great success in neuralgia, migraine, gout, rheumatism, locomotor ataxia and other painful affections, and is frequently given with Sodium Salicylate and Caffeine.

It is a good uterine sedative; it also relieves sea-sickness.

As a pain-relieving remedy Phenacetin is preferred by some, as it is less likely to produce toxic effects.

10 p.c. solution locally in epistaxis.—*M.A.* '94, 253; *L.* '93, ii. 453. As a styptic and antiseptic.—*B.M.J.E.* '95, i. 28; *L.* '95, i. 1453. In tannic acid solution as a styptic.—*B.M.J.E.* '95, ii. 90. One of the most pleasant and rapid remedies for influenza.—*Pr.* liv. 383. Discussion on its benefits and risks as an analgesic.—*B.M.J.* '98, ii. 1054; it is contra-indicated in cardiac weakness, and cases of extreme exhaustion,—*T.G.* '89, 457.

As the result of an enquiry, as to the ill-effects of Phenazone, by a Committee of the British Medical Association, it is stated

that the commencing dose should not exceed 10 grains, and should not be repeated too frequently; there is a necessity for watching its action, but ill-effects are not of the frequency or importance ascribed to them by a widespread impression. The large majority of observers agree in stating that they are of no importance whatever, and that, with reasonable and judicious care, they limit in no way the general usefulness of the drug as a therapeutic agent.—*B.M.J.* '94, i. 88.

Toxic symptoms following the administration of 10 grains dissolved in 1 oz. of Water, recovery.—*B.M.J.* '99, ii. 85.

**Dose.**—5 to 20 grains = 0·32 to 1·3 grammes.

Swiss, maximum single dose, 2·0 grammes; maximum daily dose, 6·0 grammes.

**Prescribing Notes.**—*Given in solution, with Tincture of Orange and Spirit of Chloroform, or Chloroform Water; or in powders, cachets, capsules, or in the form of effervescent granules.*

**Incompatibles.**—Spiritus Ætheris Nitrosi, Tannic Acid in aqueous solutions, Extractum Cinchonæ Liquidum, and other astringent decoctions and infusions. Chloral Hydrate is not incompatible with Phenazone in moderately dilute aqueous solution. Sodium Salicylate is not incompatible with Phenazone in aqueous solution, but forms an oily liquid if the solids be mixed, and exposed to the air.—*P.J.* (3) xx. 861.

The incompatibility of Antipyrine and Spiritus Ætheris Nitrosi may be overcome by prescribing them with Sodium Bicarbonate.—*A.J.P.* '94, 321; *C.D.* '98, i. 357.

**Not Official.**—Pulv. Phenobrom. Co., Phenazonum Efferves- cens, Acetopyrine, Ferripyrin, Hypnal, Iodopyrin, Migrainine, Pyramidon, Salipyrin, Tolypyprin and Tussol.

**Official in Aust., Dan., Dutch, Fr. (Analgesine), Ger. (Pyrazol- lumen Phenyldimethylicum), Hung., Ital., Jap., Mex. (Anti- pirina), Norw., Russ., Swed. and Swiss.**

Chloroform extracts Antipyrine from alkaline solution, but imperfectly from acid solution.

### Not Official.

**PULV. PHENOBROM. CO.** (Squire).—A granular effervescent preparation, containing 5 grains of Phenazone, with Sodium Salicylate, Potassium Bromide, and Caffeine, in the tablespoonful dose.

**PHENAZONUM EFFERVESCENS** (*B.P.C.*).—A granular effervescent preparation, containing 8 grains of Phenazone in 100.

**Dose.**—60 to 120 grains = 4 to 8 grammes.

**ACETOPYRINE** (Antipyrine Aceto-salicylate).—A white, crystalline powder, sparingly soluble in Water, readily soluble in Alcohol (90 p.c.), possessing antipyretic and analgesic properties; it

has been recommended in rheumatism and neuralgia. It is also known under the name **Pyrosal**.

**Dose.**—5 to 10 grains = 0·32 to 0·65 grammes.

**FERRIPYRIN.**—A compound of Antipyrine and Ferric Chloride, containing about 64 p.c. Antipyrine. Occurring as an orange-red powder, soluble in Water. In 20 p.c. solution it has been found useful as a haemostatic or styptic. Useful in chlorosis and anaemia.—*B.M.J.* '95, i. 1382; *L.* '95, i. 1320; *B.M.J.E.* '95, i. 44; as analgesics, Ferripyrin, Tolypyrrin, and Pyramidon appear to be neither beneficial nor harmful, and are therefore of no therapeutic value for the relief of urgent pain.—*Scot. Med. and Surg. Journ.* '96, iii. 442.

**Dose.**—Usually 5 grains = 0·32 grammes.

**HYPNAL.**—Is a crystalline compound of Antipyrine with Chloral Hydrate, readily soluble in Water, has been recommended as a hypnotic; used in simple insomnia, delirium tremens and maniacal excitement.—*Pr.* i. 297; in the insomnia due to neuralgia or migraine, or the pyrexia of phthisis—*M.P.* '94, i. 267.

**Dose.**—10 to 20 grains = 0·65 to 1·3 grammes.

It possesses the depressing action on the heart of both Antipyrine and Chloral Hydrate.

**IODOPYRIN.**—Colourless, glistening, prismatic needles, or as a white, crystalline powder, sparingly soluble in Water, soluble in Alcohol (90 p.c.). Antipyretic and antiseptic. Has been given in cases of puerperal fever; and has been found useful in acute articular rheumatism.—*B.M.J.E.* '00, i. 12.

**Dose.**—5 to 15 grains = 0·32 to 1 grammes.

**Bromopyrin** has also been given in the same doses as an antipyretic.

**MIGRAININE.**—A registered name for a double Citrate of Caffeine and Antipyrine. A white, odourless powder, soluble in Water. Has been found useful in migraine and in neuralgia.—*C.D.* '95, i. 3; *P.J.* '97, ii. 18.

**Dose.**—7½ to 15 grains = 0·5 to 1 grammes.

**Official in Austr. Add., and Dutch Supp.**

**PYRAMIDON** (Dimethyl-amido-antipyrin).—A yellowish-white, tasteless, crystalline powder, readily soluble in Water and in Alcohol (90 p.c.).

**Dose.**—As an analgesic, 10 grains = 0·65 grammes; as an antipyretic, 3 to 5 grains = 0·2 to 0·32 grammes.—*B.M.J.E.* '97, ii. 7, 84; '00, i. 56.

5 grains several times daily in the treatment of asthma, especially when of reflex origin.—*P.J.* '03, i. 340.

In typhoid fever, 5 to 6-grain doses regularly night and day every two hours, until temperature keeps down on its own account; in severe cases 6 grains, in mild 3 grains.—*B.M.J.E.* '03, ii. 23.

4 grains repeated in half an hour caused marked reduction in temperature in typhoid fever.—*B.M.J.E.* '03, ii. 79.

Four to five spoonfuls of a 1 p.c. solution in the treatment of sciatica.—*B.M.J.E.* '04, i. 72.

**Official in Dutch Supp.**

**Pyramidon Mono- and Bi-Camphorate** and a **Salicylate** are known and have received some attention, the two former as antipyretics and anhydrotics in doses of 5 to 10 grains, the latter has been found useful in subacute and chronic rheumatism, also in doses of 5 to 10 grains = 0·32 to 0·65 grammes.

**SALIPYRIN** (Antipyrine Salicylate).—A white, crystalline, odourless powder; soluble 1 in 240 of Water, soluble 1 in 4 of Alcohol (90 p.c.).

In uterine haemorrhage, *B.M.J.E.* '93, ii. 82; *L.* '95, i. 1005; *P.J.* '95, ii. 363; a specific for influenza, *Y.B.T.* '95, 454; *B.M.J.E.* '93, ii. 103; in peliosis rheumatica, *B.M.J.E.* '97, i. 44; as an analgesic in painful states of rheumatic origin, *B.M.J.* '98, ii. 1055.

**Dose.**—10 to 30 grains = 0·65 to 2 grammes.

**Official in Austr., Dan., Dutch Supp., Fr. Supp., Ger., Russ. and Swed.**

**TOLYPYRIN**.—A body allied to Antipyrine (Phenazone), readily soluble in Water, and in Alcohol (90 p.c.); insoluble in Ether.

Antipyretic and analgesic; has been given in acute rheumatism.—*L.* '94, ii. 991; *Pr.* 1. 383. *See also under 'Ferrypyrrin.'*

**Dose.**—5 to 20 grains = 0·32 to 1·3 grammes.

**Tolysal** (Tolypyrrin Salicylate), sparingly soluble in Water, has been given in similar doses.

**Tussol** (Antipyrine Amygdalate).—In white granular crystals. Recommended in whooping-cough. Dose, for young children, 1 to 2 grains; older children may take as much as 7 grains. It should not be taken with milk.—*L.* '95, i. 1452; *P.J.* (3), xxv. 912, 958.

Two **Antipyrine Camphorates** are known, the neutral and the acid salt, both are antipyretic and antisudorific in action.—*P.J.* '02, i. 161.

## PHENOL.

*See ACIDUM CARBOLICUM.*

**Not Official.**

## PHENOLPHTHALEIN.

DI-HYDROXY-DIPHENYL-PHTHALIDE.

$C_{20}H_{14}O_4$ , eq. 315·72.

In small, odourless crystals, or as a pale yellowish-white powder, almost insoluble in Water, readily soluble in Alcohol (90 p.c.).

It is used as an indicator of neutrality in volumetric analysis, and is of interest from the magnificent pink colouration which its solution acquires by the action of alkalis. The weakest acids, on the other hand, destroy the colour.

Used as an aperient in doses of 1 to 5 grains = 0·06 to 0·32 grammes.

**PURGEN.**—Under this name tablets of Phenolphthalein in three strengths have been introduced as a purgative, containing respectively  $\frac{3}{4}$ ,  $1\frac{1}{2}$  and  $7\frac{1}{2}$  grains.

**NOSOPHEN** (Tetra-iodophenolphthalein).—A yellow, odourless powder, insoluble in Water, soluble in Ether and in Chloroform. Intestinal antiseptic. Introduced as a substitute for Iodoform.

**Dose.**—5 grains = 0·32 grammes.

**ANTINOSIN** (Sodium Tetra-iodophenolphthalein).—Blue prismatic crystals or blue amorphous powder, soluble in Water and in Alcohol (90 p.c.). Antiseptic. Introduced as a substitute for Iodoform.

**Dose.**—5 grains = 0·32 grammes.

**EUDOXIN** (Bismuth Tetra-iodophenolphthalein).—A reddish-brown, odourless powder, insoluble in Water. Introduced as a gastric and intestinal antiseptic.

**Dose.**—3 to 8 grains = 0·2 to 0·52 grammes.

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### Not Official.

#### PHLORIDZIN.

A glucoside, obtained from various Rosaceous Trees.

A light, crystalline powder, whitish, or pale yellow, slightly soluble in Water, 1 in 4 of Alcohol (90 p.c.).

It quiets irritability of the stomach. It induces artificial diabetes.

**Dose.**—5 to 15 grains = 0·32 to 1 grammes, in mixtures, or in pills with 'Diluted Glucose.'

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### PHOSPHORUS.

#### PHOSPHORUS.

**P**, eq. 30·80.

A colourless, or pale yellowish, translucent, waxy solid, having a characteristic, disagreeable odour. It rapidly oxidises on exposure to the air, and should be preserved under the surface of water in well-stoppered bottles, away from the light, and in a cool place. It is luminous in the dark.

**Solubility.**—Slightly soluble in Absolute Alcohol; 1 in 200 of Ether; 1 in 25 of Chloroform; 2 in 1 of Carbon Bisulphide;

about 1 in 60 of Olive Oil ; 1 in 60 of Oil of Turpentine ; also in melted fats. Insoluble in Water.

**Medicinal Properties.**—Given as a nervine tonic, and as an aphrodisiac. Its prolonged use affects the structure of bones, causing them to become more dense ; it also affects the liver and kidneys, leading to fatty degeneration. The preparations are **Oleum** and **Pilula**, and it has been combined with Cod-Liver Oil and other menstrua ; should be given with caution, as gastritis may be set up.

Sodium and Calcium Hypophosphites are other forms of giving loosely-combined Phosphorus.

**Dose, in pill or solution.**— $\frac{1}{100}$  to  $\frac{1}{20}$  grain = 0·0006 to 0·0013 grammes.

*Ph. Ger.* maximum single dose, 0·001 grammes ; maximum daily dose, 0·003 grammes.

**Prescribing Notes.**—Generally given in pill form, to which may be added other tonics, such as Iron, Quinine and Strychnine ; also dissolved in Almond Oil and Cod-Liver Oil.

*It should always be handled with caution, and be cut under water.*

**Official Preparations.**—**Oleum Phosphoratum** and **Pilula Phosphori**. Used in the preparation of **Acidum Phosphoricum Concentratum** and **Calcii Hypophosphis**.

**Not Official.**—**Elixir Phosphori**, **Pilula Phosphori c. Sevo**, and **Tinctura Phosphori Composita**.

**Antidotes.**—Stomach-tube, emetics. Copper Sulphate is both emetic and antidote : 3 grains dissolved in Water every five minutes till vomiting is induced, then continue it in 1 grain doses every  $\frac{1}{4}$  hour, with 10 drops of Solution of Morphine if rejected ; also 30 drops of old or French Oil of Turpentine every half-hour. Half an ounce of Epsom Salts as a purgative. Demulcent drinks, but avoid oils and fats.

**Official in Austr. Add., Belg., Dan., Dutch, Fr., Ger., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

#### **OLEUM PHOSPHORATUM. PHOSPHORATED OIL.**

1 of dry Phosphorus dissolved in 99 (by weight) of Almond Oil at 180° F. (82·2° C.). The Oil must first have been heated to 300° F. (149° C.) for fifteen minutes, cooled and filtered.

**Dose.**—1 to 5 minims = 0·06 to 0·3 c.c. (about 1 in 100)

**Official in Austr. Add., 1 in 1000 Almond Oil ; Belg. and Ital., 1 in 100 Olive Oil ; Fr., Swed. and U.S., 1 in 100 Almond Oil and Ether ; Mex. (Aceite fosforado), 1 in 100 Sesame Oil ; Swiss, 1 in 100 Almond Oil and Carbon Bisulphide.**

#### **PILULA PHOSPHORI. PHOSPHORUS PILL.**

Dissolve 10 grains of Phosphorus in about 33 minims of

Carbon Bisulphide, and add it to a mixture of 125 grains of melted White Beeswax and 125 grains of Lard cooled to a cream-like consistence; mix thoroughly, adding also 115 grains of Kaolin.

The pill-mass should be kept under water, in a light-proof stoppered bottle, and when required it should be made into pills with one-third of its weight of powdered Gum Acacia and varnished.

The finished pill is now 1 in 50, which is twice the strength of B.P. 1885.

**Dose.**—1 to 2 grains = 0·06 to 0·13 grammie.

Official in U.S., about  $\frac{1}{100}$  grain of Phosphorus in each pill.

#### Not Official.

**ELIXIR PHOSPHORI (B.P.C.).**—Compound Tincture of Phosphorus, 1; Glycerin, 4; should be preserved from the light. Each fluid drachm contains  $\frac{1}{50}$  grain = 0·0013 grammie of Phosphorus.

**Dose.**—15 to 60 minims = 0·9 to 3·6 c.c.

U.S. (Elixir Phosphori), 21 of Spiritus Phosphori in 100.

**PILULA PHOSPHORI CUM SEVO.**—(1) Phosphorus, 10 grains; Mutton Suet, 90 grains; Purified Carbon Bisulphide, 40 minims. Dissolve the Phosphorus in the Carbon Bisulphide, and incorporate with the Suet, previously rubbed into a smooth paste. (2) Starch, 60 grains; Powdered Liquorice Root, 60 grains; Powdered Soap, 40 grains; Powdered Tragacanth, 12 grains; Glycerin, 48 minims. Make into a pill mass.

No. 1 should be kept in a stoppered bottle, and incorporated with No. 2 as required for dispensing. One part of No. 1 with 8 parts of No. 2.

Each 3-grain pill will contain  $\frac{1}{30}$  grain of Phosphorus.

**TINCTURA PHOSPHORI COMPOSITA (B.P.C.).**—Dissolve 12 grains Phosphorus in  $2\frac{1}{2}$  fl. oz. Chloroform by the aid of a gentle heat; add the solution to  $12\frac{1}{2}$  fl. oz. Ethylic Alcohol and shake well. Should be preserved in well-stoppered bottles, and kept from the light.

10 minimis contains  $\frac{1}{60}$  grain of Phosphorus.

**Dose.**—3 to 12 minims = 0·18 to 0·71 c.c.

U.S., Spiritus Phosphori, 1·2 in 1000; Dutch Supp., Solutio Phosphori Aetherea, 1 in 200.

## PHYSOSTIGMATUS SEMINA.

### CALABAR BEAN.

The ripe Seeds of *Physostigma venenosum*.

Indigenous to Western Africa.

The chief constituent is a poisonous crystalline alkaloid, **Physostigmine or Eserine.**

**Medicinal Properties.**—Myotic, antispasmodic, expectorant. It increases the flow of saliva and most of the other secretions. Has been used in tetanus; but its principal use is in ophthalmic work. *See 'Physostigminæ Sulphas.'*

**Official Preparation.**—Extractum Physostigmatis. Used to prepare *Physostigminæ Sulphas.*

**Not Official.**—Tinctura Physostigmatis.

**Official in Belg., Dutch, Fr., Jap., Mex., Port., Span., Swed. and U.S.**

### **EXTRACTUM PHYSOSTIGMATUS. EXTRACT OF CALABAR BEAN.**

16 of Calabar Bean treated with 80 of Alcohol (90 p.c.); the liquid evaporated to a soft extract, and mixed with three times its weight of Milk Sugar to form a firm extract.

It is about one-fourth the strength of B.P. 1885, and of the Foreign Pharmacopœias.

**Dose.**— $\frac{1}{4}$  to 1 grain = 0·016 to 0·032 grammes.

It does not form a clear solution with Water, it requires to be filtered.

**Official in Belg., Fr., Jap., Mex., Port., Span. and U.S.; Dutch, with 5 p.c. of Glycerin.**

28 lbs. of Calabar Beans, treated with Alcohol (90 p.c.), yielded 2·07 p.c. of extract; this extract yielded 5·74 p.c. of alkaloids, which is equal to nearly 0·12 p.c. of alkaloids in the Beans.

The same powder treated with boiling Alcohol (90 p.c.) in an exhaustion apparatus yielded 4·66 p.c. of extract; which extract yielded 3·2 p.c. of alkaloids, which is equal to nearly 0·15 p.c. of alkaloids in the Beans.

**Not Official.**

**TINCTURA PHYSOSTIGMATUS (B.P.C.).**—Calabar Bean, 1; Alcohol (90 p.c.), 5.

**Dose.**—5 to 15 minimis = 0·3 to 0·9 c.c.

**Official in Fr., 1 and 5; Mex., 1 in 5; U.S., 15 in 100.**

### **PHYSOSTIGMINÆ SULPHAS.**

**PHYSOSTIGMINE SULPHATE.**

*B.P. Syn.*—**ESERINE SULPHATE.**

$(C_{15}H_{21}N_3O_2)_2, H_2SO_4 \cdot xH_2O$ , eq. 643·80.

A whitish or yellowish-white, very deliquescent micro-crystalline powder, possessing a bitter taste. It should be

carefully preserved in small, well-stoppered dark amber-coloured bottles, or in sealed tubes protected from the light.

**Solubility.**—4 in 1 of Water; 2½ in 1 of Alcohol (90 p.c.).

**Medicinal Properties.**—It is used to contract the pupil in ciliary paralysis due, e.g., to diphtheria; to reduce intra-ocular tension in glaucoma, etc.; to prevent or reduce prolapse of the iris after corneal wounds; to diminish the amount of light in painful affections of the eye; to break down adhesions due to iritis, its use being alternated with that of Atropine; and to remove the prolonged dilatation and paralysis produced by the latter.

**Dose.**— $\frac{1}{60}$  to  $\frac{1}{20}$  grain = 0·0011 to 0·0032 grammes.

*Dutch Supp.* maximum single dose, 0·001 gramme; maximum daily dose, 0·003 gramme.

**Prescribing Notes.**—The salts of *Physostigmine* as well as the solutions are liable to become pink by oxidation. They should be kept in yellow actinic glass bottles, and as much as possible preserved from the air.

If desirable the colour of the solutions can be preserved by the addition of a trace of *Hypophosphorous Acid* or *Sulphurous Acid*.

**Official Preparation.**—*Lamellæ Physostigminæ.*

**Not Official.**—*Guttæ Physostigminæ*, *Guttæ Physostigminæ cum Cocaina*, *Physostigmina*, *Physostigminæ Hydrobromidum*, and *Physostigminæ Salicylas*.

**Official in Belg., Dutch Supp., Fr., Ger., Mex., Span. and U.S.**

#### **LAMELLÆ PHYSOSTIGMINÆ. DISCS OF PHYSOSTIGMINE.**

Gelatin discs, containing  $\frac{1}{1000}$  grain of *Physostigmine Sulphate*.

Now made with *Physostigmine Sulphate* instead of *Physostigmine*.

**Official in Ital., Dischi Oftalmici con Eserina**, each disc containing about 0·0001 gramme *Eserine Salicylate*.

Hypodermic lamels containing  $\frac{1}{100}$  grain.—*St. Bartholomew's.*

#### **Not Official.**

**GUTTÆ PHYSOSTIGMINÆ.**—*Physostigmine Sulphate*,  $\frac{1}{2}$ , 1, 2, or 4 grains; Water, 1 fl. oz.—*London Ophthalmic*.

**GUTTÆ PHYSOSTIGMINÆ CUM COCAINA.**—*Physostigmine Sulphate*, 1 grain; *Cocaine Hydrochloride*, 4 grains; Water, 1 fl. oz.—*London Ophthalmic*.

**PHYSOSTIGMINÆ HYDROBROMIDUM.**—In colourless crystals, very soluble in Water.

**Official in Fr.**

**PHYSOSTIGMINA** (Eserine).—Colourless or pale pink glistening crystals, very slightly soluble in Water, readily soluble in Alcohol (90 p.c.), Ether and Chloroform. It was Official in *B.P.* '85, but deleted from *B.P.* '98, the Sulphate being made Official.

**Unguentum Physostigminæ** (Unguentum Eserinæ).—Physostigmine, 1 grain; Soft Paraffin, 1 oz.—*London Ophthalmic.*

**PHYSOSTIGMINÆ SALICYLAS.** *Syn.* **ESERINÆ SALICYLAS.**—Colourless or faintly yellowish acicular crystals, becoming coloured on exposure to light and air. Soluble 1 in 130 of Water; 1 in 15 of Alcohol (90 p.c.).

*Ph. Ger.* maximum single dose, 0·001 grammie; maximum daily dose, 0·003 grammie.

**Official** in Austr., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Russ., Swed., Swiss and U.S.

### Not Official.

#### PHYTOLACCA.

Both the **Fruit** (Poke fruit) and the **Root** (Poke root) of *Phytolacca decandra* are Official in U.S.

The Fluid Extract has been recommended for inflamed and painful mammae, internally and as a local application.—*B.M.J.* '87, ii. 844. It has also been used in orchitis.—*T.G.* '85, 622. In large doses it is emetic, purgative, and slightly narcotic.

**EXTRACTUM PHYTOLACCÆ RADICIS FLUIDUM** (U.S.).—1 fl. oz. is equal to 1 oz. of root.

**Dose.**—As an alterative, 1 to 5 minims = 0·06 to 0·3 c.c.

**PHYTOLACCIN.**—An eclectic remedy used in rheumatic and syphilitic conditions. In pill as a cholagogue and alterative,  $\frac{1}{4}$  to  $\frac{1}{2}$  grain = 0·016 to 0·032 grammie; purgative, 2 to 4 grains = 0·13 to 0·26 grammie.

#### PICRORHIZA.

The dried Rhizome of *Picrorhiza Kurroa*, dose in powder, as a tonic, 10 to 20 grains = 0·65 to 1·3 grammie; as an antiperiodic, 40 to 50 grains = 2·6 to 3·2 grammes, is Official in the *Ind. and Col. Add.* for India and the Eastern Colonies; also **Extractum Picrorhizæ Liquidum**, 1 in 1 Fluid Extract made with Alcohol (60 p.c.), dose, 20 to 60 minims = 1·2 to 3·6 c.c.; and **Tinctura Picrorhizæ**, Picrorhiza 1, Alcohol (45 p.c.) 8, by maceration, dose,  $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

#### PICROTOXINUM.

##### PICROTOXIN.

Colourless, shining, prismatic crystals, or micro-crystalline

powder permanent in the air, possessing an intensely bitter taste. It is the neutral principle obtained from 'Coccus Indicus' described in B.P. as the Fruits, and in U.S. as the Seeds of *Anamirta paniculata*.

**Solubility.**—1 in 334 of Water; 1 in 13½ of Alcohol (90 p.c.).

**Medicinal Properties.**—Anhydrotic;  $\frac{1}{60}$  grain at bed-time has been given as a remedy against immoderate sweating in phthisis.

Externally used with caution as an ointment (8 grains to 1 oz.) for pediculi.

**Dose.**— $\frac{1}{100}$  to  $\frac{1}{25}$  grain = 0.0006 to 0.0024 grammie.

**Antidotes.**—Stomach-tube, or emetic; Chloral, and Potassium Bromide.

Official in Fr., Mex. and U.S.

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## PILOCARPINÆ NITRAS.

PILOCARPINE NITRATE.

$C_{11}H_{16}N_2O_2$ ,  $HNO_3$ , eq. 269·23.

White, distinct crystals, permanent in the air, or as a white micro-crystalline powder. It is the Nitrate of an alkaloid, Pilocarpine, obtained from Jaborandi Leaves. A synthetic Pilocarpine has also been produced.

**Solubility.**—1 in 8 of Water; 1 in 50 of Alcohol (90 p.c.); almost insoluble in Ether and in Chloroform.

**Medicinal Properties.**—A powerful diaphoretic and sialagogue. Is useful in the dropsy and thirst of Bright's disease, and to remove pleural and peritoneal effusion. It should be used with caution in cases of dropsy due to weakness or disease of the heart. It contracts the pupil, and has been used in detachment of the retina, glaucoma and intra-ocular haemorrhage; it has been given in bronchitis and asthma; and in chronic poisoning by lead, arsenic or mercury.

It has been used to increase the growth of the hair, as a Lotion containing 1 or 2 grains to 1 fl. oz.; and as an Ointment containing 4 to 8 grains to 1 fl. oz. Useful in some forms of deafness.

In doses of  $\frac{1}{5}$  grain hypodermically in treatment of puerperal eclampsia.—T.G.'01, 623.

In pneumonia,  $\frac{1}{10}$  to  $\frac{1}{3}$  grain hypodermically.—L. '03, i. 1369; '03, ii. 342; B.M.J. '03, ii. 788.  $\frac{1}{6}$  to  $\frac{1}{4}$  grain by the mouth.—L. '03, i. 823.

In detachment of the retina, 1 centigramme of the Nitrate injected in a 2 p.c. solution.—*B.M.J.E.* '99, ii. 68.

$\frac{1}{2}$  grain injected subcutaneously in severe uræmia of Bright's disease.—*Pr.* lxvii. 657.

Objection taken to the *B.P.* dose,  $\frac{1}{20}$  to  $\frac{1}{2}$  grain when given by the mouth as being too high. In one case  $\frac{1}{10}$  grain caused vomiting every time it was taken; in another  $\frac{8}{10}$  grain caused profuse sweating and exhaustion lasting some hours. Probably  $\frac{1}{20}$  grain is the highest initial dose that should be given.—*B.M.J.* '02, ii. 1104.

**Dose.**— $\frac{1}{20}$  to  $\frac{1}{2}$  grain = 0.0032 to 0.032 grammes.

**Prescribing Notes.**—*Most frequently used by hypodermic injection; also given in solution, and in pills with Milk Sugar, and Glucose.*

*Supplied also in hypodermic tablets,  $\frac{1}{10}$ ,  $\frac{1}{5}$ ,  $\frac{1}{6}$ ,  $\frac{1}{4}$  and  $\frac{1}{3}$  grain.*

The nearly equal solubility of the Pilocarpine Nitrate and Pilocarpidine Nitrate allows them to crystallise together. With the Hydrochlorides the difference in solubility is much more marked, so that a Pilocarpine Hydrochloride can be obtained containing very little Pilocarpidine.

The Pilocarpine Hydrochloride is preferred in all other countries, *see below*, and is most frequently prescribed in London; but it is incompatible with Silver salts, with which Pilocarpine is sometimes used.

**Not Official.**—Guttae Pilocarpinæ, Injectio Pilocarpinæ Nitratis, Pilocarpinæ Hydrochloridum, Pilocarpinæ Phenas, and Pilocarpinæ Salicylas.

**Official in Mex. and Span.** Fr. and Mex. have Pilocarpine.

**Antidote.**—Belladonna by the mouth, or Atropine hypodermically.

#### Not Official.

**GUTTAE PILOCARPINÆ.**—Pilocarpine Nitrate, 2 gratus; Distilled Water, 1 fl. oz.—*London Ophthalmic.*

**INJECTIO PILOCARPINÆ NITRATIS.**—Pilocarpine Nitrate, 1; Water, 20. **Dose,** 2 to 5 minims.—*London Ophthalmic.*

Pilocarpine Nitrate, 1 grain; Distilled Water, 12 minims. **Dose,** 1 to 4 minims.—*Guy's.*

To prepare the patient for the injection, remove the night-shirt, wrap him closely in a warm blanket, and cover him with two more blankets. Put hot-water bottles to his feet, and give him hot drinks freely. After the sweating has ceased, remove the blankets gradually, dry the skin thoroughly, and leave him between warm dry blankets.—*Guy's.*

**PILOCARPINÆ HYDROCHLORIDUM.**—White crystals, deliquescent in moist air; soluble in less than its own weight of Water; 1 in 10 of Ethyl Alcohol; almost insoluble in Ether or in Chloroform.

A more definite salt than the Nitrate, being more easily separated from accompanying Hydrochlorides of the other bases.

**Dose.**— $\frac{1}{20}$  to  $\frac{1}{2}$  grain = 0·0032 to 0·032 grammes.

*Ph.Ger.* maximum single dose, 0·02 grammes; maximum daily dose, 0·04 grammes.

**Incompatibles.**—Alkalies, and Alkaline Carbonates, Lead, Mercurous and Silver Salts.

**Official in Austr., Belg., Dan., Dutch, Ger., Hung., Ital., Jap., Mex., Norw. Russ., Swed., Swiss and U.S.**

**PILOCARPINÆ PHENAS.**—A colourless, oily liquid, soluble in Water and in Alcohol, has been recommended in the treatment of phthisis and of intermittent fevers, 1 fl. dram. of a solution of 1 grain in 10 fl. oz. of 2 $\frac{3}{4}$  p.c. Carbolic Acid Solution (**Aseptoline**) injected into the abdominal wall.—*P.J.* '96, ii. 379; '98, i. 84.

It has also been found useful in the treatment of malaria.

**PILOCARPINÆ SALICYLAS.**—Colourless crystals, or as a white crystalline powder, soluble in Water, less soluble in Alcohol (90 p.c.). Employed for similar purposes to the Nitrate or Hydrochloride.

## PILULÆ.

### PILLS.

This class of medicine, so convenient and portable, was introduced in the earliest Pharmacopœias, and some of the formulas remain almost unchanged. The Pilula Rifi (Pilula Aloes et Myrrhae) has for at least two hundred years maintained practically the same composition, but in B.P.'98 the Saffron is omitted.

**Excipients** for pills are of two kinds: (1) those which are more or less fluid, and employed to bind together powders, or to impart the necessary moisture to adhesive substances; (2) those, generally in powder, which are intended to absorb moisture and give solidity to the mass. Of the former, 'Dispensing Syrup' (equal volumes of Alcohol (90 p.c.), Glycerin, Syrup and Mucilage) and 'Diluted Glucose' (Glucose 3, Syrup 1), are most in request; Alcohol (60 p.c.) also is very useful. Glycerin by itself is distinctly inferior to the foregoing. Glycerin of Tragacanth is much employed, but in the majority of cases where it would be used, Glucose, or 'Diluted Glucose' is preferable. Of the powders, that of Liquorice root is most useful when moisture is to be absorbed and no binding power is required. An unexpected exception is the case of Carbolic Acid, which makes a very good plastic mass with twice its weight of Liquorice powder (when well worked together, the result is very satisfactory). When more plasticity is required, the absorbent powder is supplemented by Compound Tragacanth Powder, or powdered Gum Acacia. For essential Oils this condition is best obtained by the use of powdered Curd Soap; as a rule, one minim of the Oil will require half a grain of the Soap and two grains of the Liquorice. A good powder to mix with

small doses of powerful medicines, is the 'Diluting Mixture' (Sugar of Milk 3, and Compound Tragacanth Powder 1), which will make a good pill with 'Diluted Glucose' q.s. A mixture of Paraffins (Massa Paraffini), or with Kaolin (Massa Kaolini), is used for substances which are readily reduced by organic matter, such as the Permanganates, and the salts of Gold and Silver. It 'goes without saying' that an excipient must not be chemically incompatible with the other ingredients, but there is not much opportunity for such an occurrence, with those above selected.

**Coatings.**—Pills have been finished in various ways: rolled in Flour, Starch, Magnesia, Liquorice powder, and in Lycopodium, or a mixture of these; enveloped in Silver or Gold Leaf; coated with Ether-Alcoholic solution of Tolu, or better with Sandarach Varnish (Ether 2, Absolute Alcohol 6, Sandarach 3), or with Gelatin or French Chalk. A good mucilage for applying the white coating to pills is: Powdered Tragacanth, 1; Powdered Gum Acacia, 4; Diluted Acetic Acid, 8; Distilled Water, 40. Another protective coating is Salol Varnish (Salol 1, Sandarach Varnish 5). Pills containing substances exceedingly soluble in Alcohol should not be varnished, as the varnish may dissolve some part of the pill.

Sandarach is Official in Austr. Add.

When pills are intended to pass through the stomach, and to be disintegrated in the intestine, they are coated with a solution of Keratine, see p. 388.

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## PIMENTA.

### PIMENTO.

The dried full-grown unripe Fruit of *Pimenta officinalis*.  
From the West Indies.

**Medicinal Properties.**—A warm aromatic stimulant and carminative, like Cloves; used as an adjuvant to tonics and purgatives.

**Dose.**—10 to 30 grains = 0·65 to 2 grammes, in powder.

**Prescribing Notes.**—The Oil may be given on sugar, or in pill with Liquorice powder and soap, see p. 481.

**Official Preparations.**—Aqua Pimentæ and Oleum Pimentæ.

**Official in Mex.,** Pimienta Gorda; Port., Pimenta da Jamaica; Span., Pimienta de la Jamaica; U.S.

### AQUA PIMENTÆ. PIMENTO WATER.

Pimento, bruised, 4; Water, 160; distil one-half. (1 in 20)  
Now 1 in 20 instead of 1 in 11½.

**Dose.**—1 to 2 fl. oz. = 28·4 to 56·8 c.c.

**OLEUM PIMENTÆ.** OIL OF PIMENTO.

A pale yellow, or yellowish-brown, oily liquid, heavier than Water; having a pleasant clove-like odour and pungent spicy taste, distilled from Pimento. Yield about 3 to  $4\frac{1}{2}$  p.c.

On exposure to the air, the colour darkens, and the oil becomes thicker. It should therefore be kept in well-stoppered bottles and protected from the light. It contains a large percentage of Eugenol, and a sesquiterpene.

**Solubility.**—In all proportions of Alcohol (90 p.c.); about 1 in 50 of Alcohol (60 p.c.).

**Dose.**— $\frac{1}{2}$  to 3 minims = 0·03 to 0·18 c.c.

Official in U.S. and Dutch Supp.

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**PINI OLEUM.**

## OIL OF PINE.

Colourless, or pale yellow, limpid oily liquid, possessing an agreeable characteristic pine odour. It is distilled from the fresh leaves of *Pinus Pumilio*.

‘Pinol’ and ‘Pumiline’ are commercial varieties of this oil.

**Solubility.**—About  $\frac{4}{5}$  dissolves 1 in 5 of Alcohol (90 p.c.), but the remaining  $\frac{1}{5}$  is much less soluble.

**Medicinal Properties.**—The vapour is a mild stimulant and disinfectant in chronic catarrhal affections of the respiratory passages. It is also applied externally in rheumatism. Internally the dose is 1 to 5 minims taken on sugar, or in the form of jujube or pastil.

**Dose.**—1 to 5 minims = 0·06 to 0·3 c.c.

Official in Austr. and Swiss.

Not Official.

**EXTRACTUM PINI PUMILIONIS.**—A liquid extract, of a brown colour, prepared from the young shoots of the *Pinus Pumilio*. It is soluble in Water, and is used in baths.

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Not Official.

**PINI SYLVESTRIS OLEUM.**

Under this name several varieties of Pine-needle Oil are supplied.

A colourless, or nearly colourless limpid oily liquid with an agreeable odour, distilled from the fresh Leaves of various species of *Pinus*. The oil distilled from *Pinus Sylvestris* is not now obtainable in commerce.

**Solubility.**—1 in 5 to 10 of Alcohol (90 p.c.) depending on the variety; in all proportions of Absolute Alcohol.

**Medicinal Properties.**—Similar to those of Oil of Turpentine. It is also used externally in rheumatism, and as an inhalation or spray with hot water in chronic laryngitis, bronchitis and phthisis.

**Official in Dutch Supp., Hung., sp. gr. 0·872; Russ., Oleum Pini Foliorum, sp. gr. 0·870 to 0·880.**

**VAPOR OLEI PINI SYLVESTRIS.**—Oil of Scotch Pine, 40 minims; Light Magnesium Carbonate, 20 grains; Water q.s. to produce 1 fl. oz.—*Throat.*

1 fl. dram. in 20 fl. oz. of Water at 140° F. for each inhalation.

## PIPER NIGRUM.

### BLACK PEPPER.

The dried unripe Fruit of *Piper nigrum*.

The ash of genuine Black Pepper varies from 4 to 6 p.c.  
Chiefly from the East Indies.

**Medicinal Properties.**—A warm carminative stimulant and stomachic. Chiefly used to assist gastric digestion and correct flatulence. Useful in haemorrhoids and in urethritis.

**Official Preparation.**—*Confectio Piperis.* Contained in *Pulvis Opii Compositus*.

**Not Official.**—*Oleo-Resina Piperis, Piperinum, Piperidine, Piperidine Guaiacolate, Piperidine Tartrate.*

**Official in Austr. Add., Belg., Fr. (Poivre Noir), Mex. (Pimienta Negra), Port. (Pimenta), Span. (Pimisuta Nigra), U.S.**

### CONFECTIO PIPERIS. CONFECTIO OF PEPPER.

Black Pepper, 2; Caraway fruit, 3; Clarified Honey (by weight), 15. (1 in 10)

**Dose.**—60 to 120 grains = 4 to 8 grammes.

### Not Official.

**OLEO-RESINA PIPERIS (U.S.).**—Obtained from Pepper by exhaustion with Ether, and separation from the Piperine.

**Dose.**— $\frac{1}{4}$  to 1 minim = 0·015 to 0·06 c.c.; given in *pill*.

**PIPERINUM (U.S.).**—A neutral principle obtained from *Piper nigrum* and also from other plants of the natural order *Piperaceæ*. Colourless or pale-yellow, glistening, prismatic crystals. Insoluble in Water, soluble in Alcohol (90 p.c.). It possesses antipyretic properties, but it is not the active principle of Pepper.

**Dose.**—2 to 8 grains = 0·13 to 0·52 gramme.

**PIPERIDINE.**—A colourless limpid liquid boiling and distilling unchanged at 106° C. It is a powerful base, produced by the

hydrolysis of Piperine, the alkaloid occurring in Pepper, or synthetically by the reduction of Pyridine by nascent Hydrogen.

**PIPERIDINE GUAIACOLATE** (Guaiaperol).—A compound of Piperidine and Guaiacol. A yellowish-white crystalline body, having a faint odour of Guaiacol. Soluble in Water. Mineral Acids and Alkalies decompose it into its constituents. Has been recommended in the treatment of phthisis.—*B.M.J.* '97, i. 136; *J.C.S. Trans.* '98, 145.

**Dose.**—5 to 30 grains = 0·32 to 2 grammes.

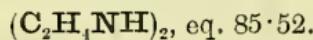
**PIPERIDINE ACID TARTRATE.**—A white crystalline powder possessing a faint odour. Readily soluble in Water. Has been introduced as a solvent for gouty deposits, uric acid gravel and calculi. It increases the solvent power of serum for Sodium Biurate to a much larger extent than Piperazine, Lysidine or Urotropine.—*L.* '98, ii. 198, 280, 345, 433, 507.

**Dose.**—10 to 15 grains = 0·65 to 1 gramme.

**Calcusol** is a mixture of Piperidine Para-Sulphamine Benzoate and Potassium Bicarbonate.

### Not Official.

#### PIPERAZINE.



Colourless deliquescent crystals, readily soluble in Water. When anhydrous it melts at 104° to 107° C., and boils at 145° C.

Piperazine (Diethylene-diamine) is produced by action of Ammonia on Ethylene Bromide or Chloride.

**Medicinal Properties.**—It has a powerful solvent action on Uric Acid, the Piperazine Urate being about seven times more soluble than Lithium Urate. It has been recommended for gouty affections in general, rheumatoid arthritis, and renal calculus and colic.—*T.G.* '93, 19; '94, 192; '95, 99; *B.M.J.* '94, i. 1291; *B.M.J.E.* '93, ii. 20; *Pr. li.* 134; *l.iii.* 265.

Little or no effect in gouty states.—(Sir Wm. Roberts and Bohland) *Pr. l.iii.* 50; in diabetes.—*B.M.J.E.* '93, ii. 72; action as a Uric Acid solvent.—*B.M.J.* '96, ii. 1901.

Piperazine did not delay the conversion of gelatinous Sodium Biurate into the crystalline variety, and the conversion when once started was but slightly slowed by the presence of this substance.—*B.M.J.* '00, i. 836; *L.* '00, i. 931. 0·05 gramme dissolved in 0·5 c.c. Water, injected in gouty tophi.—*B.M.J.E.* '99, ii. 56.

**Dose.**—5 to 15 grains = 0·32 to 1 gramme.

**Prescribing Notes.**—Usually given in mixture, also in Aërated Water, or as a granular effervescent preparation.

Official in Dutch Supp.

**LYCETOL** (Dimethylpiperazine Tartrate).—A white powder

readily soluble in Water, possessing an acid taste. Has been recommended in the treatment of chronic gout and rheumatism.

**Dose.**—5 to 10 grains = 0·32 to 0·65 grammes.

**LYSIDINE** (Ethylene-ethenyl-diamine).—A reddish-white, crystalline substance, very hygroscopic, with a peculiar odour. Commercially it is sold in the form of a 50 p.c. solution.

A diuretic, recommended in the treatment of gout and as a solvent of Uric Acid deposits.—*B.M.J.* '96, ii. 901.

It has an influence in increasing the solvent power of serum for Sodium Biurate and of urine for uratic deposit.—*L.* '98, ii. 203.

Though it delayed the conversion of the gelatinous Sodium Biurate into the crystalline form, yet when the conversion was once started it had practically no effect in slowing it.—*L.* '00, i. 931; *B.M.J.* '00, i. 836.

**Dose** (of the liquid).—30 to 60 minims = 1·8 to 3·6 c.c., well diluted with Water or Aërated Water.

**Lysidine Acid Tartrate**, a white powder soluble in Water.

**Dose.**—15 to 30 grains = 1 to 2 grammes.

**Piperazine Quinate or Kinate** (Sidonal).—A white granular powder, readily soluble in Water, the solution having a pleasant slightly acid taste. Recommended as a solvent for uric acid and for gouty deposits.—*B.M.J.* '01, i. 1408.

**Dose.**—5 to 15 grains = 0·32 to 1 gramme.

**New Sidonal** (Quinic Anhydride).—A white, crystalline powder, readily soluble in Water. Introduced for the treatment of gout.

**Dose.**—5 to 15 grains = 0·32 to 1 gramme.

#### Not Official.

#### PISCIDIA.

*Syn.*—JAMAICA DOGWOOD.

The Root-bark of *Piscidia erythrina*.

The shrub is a native of South America and the West Indies, where it has been used for stupefying fish.

**Medicinal Properties.**—Hypnotic, anodyne. A sedative in irritant cough; an antispasmodic in asthma.

Has been used in neuralgia and toothache.—*P.J.* (3) xvi. 1014.

Has been found useful in nervous debility and nervous irritability.—*T.G.* '88, 102.

**EXTRACTUM PISCIDIÆ LIQUIDUM.**—1 fl. oz. is equal to 1 oz. of the root.

**Dose.**—30 to 120 minims = 1·8 to 7·1 c.c.

**Extractum Piscidiæ.**—The above evaporated to an extract for pills. Dose, 1 to 5 grains = 0·06 to 0·32 grammes.

**PIX BURGUNDICA.****BURGUNDY PITCH.**

An opaque or translucent yellowish- or reddish-brown brittle solid, breaking with a concoidal fracture. It possesses a terebinthinate odour. Imported from Germany. The prepared resinous exudation obtained from the stem of *Picea excelsa*.

It is the Thus or Frankincense of Lond. and Dub. Pharmacopæias. It exudes from the spruce fir, and when melted and strained is called Burgundy Pitch.

**Solubility.**—Almost entirely dissolves 1 in 20 of Alcohol (90 p.c.) ; the greater part dissolves 1 in 1½ of Glacial Acetic Acid.

**Medicinal Properties.**—The Plaster is applied to the chest in chronic pulmonary complaints, to the loins in lumbago, to the joints in chronic articular affections, and to other parts to relieve local pain of a rheumatic character. It acts as a counter-irritant.

**Official Preparation.**—Emplastrum Picis.

**Official in Belg., Fr., Hung., Ital., Mex., Port., Span., Swiss and U.S.**

**EMPLASTRUM PICIS. PITCH PLASTER.**

Burgundy Pitch, 26 ; Frankincense, 13 ; Resin, 4½ ; Yellow Beeswax, 4½ ; Olive Oil (by weight), 2 ; Distilled Water, 2 ; melt and evaporate to the consistence of a plaster.

The Expresssed Oil of Nutmeg is now omitted.

**Official in U.S., Yellow Wax 3, Olive Oil 1, Burgundy Pitch 16 ; Belg., Fr., Port., Span. and Swiss, Yellow Wax 1, Burgundy Pitch 3 ; Dan. (Emplastrum Picis), Pitch 8, Yellow Wax 8, Suet 1, Colophonium 8 ; Ital. (Empiastro Adesivo), Yellow Wax 3, Burgundy Pitch 7, Diachylon Plaster 40 ; Mex. (Emplasto Aglutinante), Pitch 74, Elemi 10, Sesame Oil 6, Yellow Wax 10.**

**PIX CARBONIS PRÆPARATA.****PREPARED COAL TAR.**

Prepared from commercial Coal Tar by dissipating all constituents volatile below 120° F. (48·9° C.), by keeping it at that temperature for one hour in a shallow vessel.

The **solution** is used in chronic eczema as a Lotion, 1 to 20 or more of Water, or as an Ointment 1 to 8. It is frequently prescribed with the Liquor or the Glycerole of Lead.

**Official Preparation.**—Liquor Picis Carbonis.

**Not Official.**—Liquor Carbonis Detergens.

**Official** in Dutch Supp., Pix Lithanthrasis depurata; Fr., Goudron de Houille.

**LIQUOR PICIS CARBONIS. SOLUTION OF COAL TAR.**

Digest for two days at 120° F. (48·9° C.) 1 (by weight) of Prepared Coal Tar in 5 of a Tincture of Quillaia (1 in 10, Alcohol, 90 p.c.); decant or filter when cold. (1 in 5)

(**Not Official.**)

**LIQUOR CARBONIS DETERGENS.**—An Alcoholic solution of Coal Tar. It is almost black, smells strongly of Naphthalene, and is of light sp. gr. Used externally in chronic scaly skin diseases diluted about 1 in 20 of Water.

Coal Tar in dermatological practice.—*B.M.J.E.* '94, ii. 88.

**Official** in Dutch Supp.

**PIX LIQUIDA.**

TAR.

A thick, dark brown or brownish-black, bituminous fluid or semi-fluid, having a strong, peculiar empyreumatic odour. Obtained by destructive distillation from the wood of *Pinus sylvestris* and other species of *Pinus*. Known commercially as Stockholm Tar.

Wood Tar contains Guaiacol and Cresol. Coal Tar yields Phenol and Cresol.

**Solubility.**—In less than its own bulk of Alcohol (90 p.c.) or Chloroform, and separates on the addition of Water; soluble 1 in 3 of Solution of Sodium Hydroxide (4 p.c.); slightly soluble in Olive Oil or Oil of Turpentine.

**Medicinal Properties.**—Similar to Turpentine. May be used internally as a disinfectant expectorant in chronic bronchitis and winter cough, taken internally or inhaled from hot water. As an external application in cases of lepra, pruritus, and also for some chronic skin diseases, such as eczema and psoriasis.

**Dose.**—5 to 10 minims = 0·3 to 0·6 c.c.; but the dose may be increased gradually.

**Prescribing Notes.**—Best given in capsules. Tar varies slightly in consistence, and is very difficult to form into pills of a convenient size; it requires so much excipient, that a 5-grain pill will contain very little Tar. Powdered Liquorice Root and Lycopodium have been recommended for the purpose, but neither of them alone yields a satisfactory mass. Equal weights of Tar, Curd Soap, Powdered Liquorice Root, and Powdered Gum Acacia, make a good

*plastic pill; the quantity of Tar which can be worked up with this mixture will vary according to the consistence of the Tar.*

**Official Preparation.**—Unguentum Picis Liquidæ.

**Not Official.**—Unguentum Picis Molle, Aqua Picis, Capsulæ Picis, Oleum Picis Liquidæ, Oleum Picis Rectificatum, Pigmentum Picis Liquidæ, Pilulæ Picis, Syrupus Picis Liquidæ, Black Pitch.

**Official** in all the Foreign Pharmacopœias.

**UNGUENTUM PICIS LIQUIDÆ.** TAR OINTMENT.

Tar (by weight), 5; Yellow Beeswax, 2.

This ointment is too hard for use. A proper consistence is obtained by replacing half of the Yellow Beeswax with Almond Oil (see Ung. Picis Molle).

Applied in cases of psoriasis and in tinea capititis.

**Official** in Belg., Tar 1, Lard 4; Dan., Pitch 9, Lard 6, Potassium Carbonate 3, Water 2; Dutch (Ung. Picis), Pix Solida 3, Resin 3, Yellow Wax 2, Olive Oil .12; Dutch Supp., also Ung. Picis Co.; Fr. (Pommade de Goudron), and Port., Tar 1, Lard 9; Span., Tar 8, Lard 30; U.S., Tar 4, Yellow Wax 1, Lard 3.

**Not Official.**

**UNGUENTUM PICIS MOLLE.**—Tar (by weight), 5; Yellow Beeswax, 1; Almond Oil, 1; melt together and stir till cold.

**AQUA PICIS** (TAR WATER, AQUA PYROLEI PINI, ACQUA DI CATRAME, EAU DE GOUDRON).—Tar, 1; finely powdered, washed and dried Pumice, 3; Distilled Water, 200; agitate for fifteen minutes, and filter.

**Dose.**—From 1 to 2 pints daily, or may be used as a wash for ulcers and wounds.

**Official** in all the Foreign Pharmacopœias except Austr., Hung., Jap. and U.S. Belg. (Aq. Picis Concentrata), Tar 50, Sodium Bicarbonate 3, Water 200; and Aqua Picis is made with Aq. Picis Conc. 3, Water 97; Dutch, Tar 1, Water 20; Dutch Supp. (Solutio Picis Alkalina), Tar 1, Sodium Carbonate, 0·1, hot Water 5; Fr. (Eau de Goudron), Tar 1, Pine Sawdust 3, Water 200; Ger., Tar 1, Pumice 3, Water 10; Dan. and Norw. (Aqua Pyrolei Pini), 1 in 10; Mex. (Aqua de Alquitran), Tar 5, Water 1000; Port. (Agua de Alcatrao), and Ital. (Acqua di Catrame), 1 in 40; Span. (Agua de Brea), 1 in 24; Swiss, Tar 1, Sawdust 1, Cold Water 10; Russ., Birch Tar 1, Water 30.

**CAPSULÆ PICIS.**—Capsules containing 5 minims = 0·3 c.c.

**Dose.**—1 or 2 capsules.

**OLEUM PICIS LIQUIDÆ** (Oil of Tar).—This volatile Oil, distilled from Tar, is Official in U.S. as an almost colourless liquid when first distilled, but becoming reddish-brown on keeping; sp. gr. about 0·970.

**OLEUM PICIS RECTIFICATUM** (Light Oil of Tar).—Colourless

when first distilled, becoming brown on keeping ; sp. gr. 0·840 to 0·870.

**PIGMENTUM PICIS LIQUIDÆ.**—Tar, 1; Alcohol (90 p.c.), 1.—  
*British Skin.*

Used as a stimulant in cases of psoriasis and of chronic dry eczema.

Its use in eczema demands caution.

**PILULÆ PICIS.**—Tar, Curd Soap, powdered Liquorice Root, and powdered Gum Acacia, equal weights mixed, and made into 5-grain pills.

**Dose.**—2 or 3 pills thrice daily.

They are sometimes made of Black Pitch, and have been taken to relieve haemorrhoids.

**SYRUPUS PICIS LIQUIDÆ (U.S.).**—Mix Tar 15 intimately with about 20 of White Sand, pour on 30 of Water, and stir frequently for 12 hours ; pour off the Water and throw it away. Pour boiling Distilled Water 80 upon the residue, stir well and frequently for 15 minutes, add Glycerin 20, and set the vessel aside for 24 hours, occasionally stirring ; decant the clear solution, and filter. Dissolve Sugar 160 in the filtrate with the aid of a gentle heat ; allow the liquid to cool, then strain it, and pass enough Water through the strainer to make the product measure 200 ; mix thoroughly.

This has now been added to *B.P.C.*

Sometimes prescribed with Syrup of Wild Cherry Bark, and also with Codeine.

**BLACK PITCH.**—There are three kinds, Archangel, Swedish, and that obtained from Gas Tar ; the latter is without odour. Pitch pills are sometimes recommended to increase the size and weight of the body.

### Not Official.

#### PLUMBUM.

##### LEAD.

**Pb**, eq. 205·35.

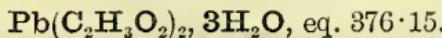
Sp. gr. 11·3 ; fuses at about 617° F. (325° C.). Lead occurs in nature as an Oxide, and as a Sulphide called *Galena* ; also in saline combination, forming the native Lead Sulphate, Phosphate, Carbonate, Chromate, Molybdate, Tungstate, and Arsenate. The native Oxide is rare, but Galena, the ore from which nearly all the Lead of commerce is extracted, is exceedingly abundant.

Fr., Plumb; Ital., Piombi; Mex. and Span., Plomo; Port., Chumbo.

**Incompatibles.**      } Are given after *Plumbi Subacetatis*  
**Antidotes.**            } Liquor, p. 495.

**PLUMBI ACETAS.**

LEAD ACETATE.



Colourless, translucent prismatic crystals, or as masses of white monoclinic prisms possessing a faint odour of Acetic Acid and a sweet metallic and astringent taste.

**Solubility.**—1 in 2 of Water; 6 in 1 of boiling Water; 1 in 20 of Alcohol (90 p.c.); 1 in 2 of Glycerin.

**Medicinal Properties.**—In small doses it is sedative and astringent, lessening morbid mucous discharges and haemorrhages in the gastro-intestinal and genito-urinary tracts, and even diminishing natural secretions; whence it is useful in diarrhoea, dysentery, cholera, and in tubercular and typhoid ulceration. Used in phthisis to check excessive expectoration, and to allay haemorrhage; in bronchitis to abate profuse secretion. Its prolonged use requires caution, otherwise chronic lead poisoning may be induced. It is often accompanied or followed by a small dose of Acetic Acid, as excess of Acid makes it less injurious to the system. Externally, it is sedative, desiccant, and astringent, diminishing profuse discharges of ulcers; used for injection in gonorrhœa and other chronic inflammatory discharges; in ophthalmia and in sprains and bruises and cutaneous inflammations.

**Dose.**—1 to 5 grains = 0·06 to 0·32 gramme.

*Ph. Ger.* maximum single dose, 0·1 gramme; maximum daily dose, 0·3 gramme.

**Prescribing Notes.**—*May be given in pills with  $\frac{1}{6}$  to  $\frac{1}{8}$  of its weight of Compound Tragacanth Powder, and massing with 'Diluted Glucose' or Dispensing Syrup, q.s., and in solution, with excess of Acetic Acid, given with Opium in the Official Pill, and Suppository.*

**Incompatibles.**—Sulphuric and Tannic Acids, and their salts; Chlorides, Iodides and Phosphates.

**Official Preparation.**—Pilula Plumbi cum Opio and Suppositoria Plumbi Composita, Unguentum Plumbi Acetatis. Used in the preparation of Glycerinum Plumbi Subacetatis, Liquor Plumbi Subacetatis Fortis.

**Antidotes.**—Same as under Plumbi Subacetatis Liquor.

Official in all the Foreign Pharmacopœias.

**PILULA PLUMBI CUM OPIO. PILL OF LEAD WITH OPIUM.**

Lead Acetate, 12; Opium, 2; Syrup of Glucose, about 1.

**Dose.**—2 to 4 grains = 0·13 to 0·26 gramme.

A four-grain pill contains about 3 grains of Plumbi Acetas and  $\frac{1}{2}$  grain of Pulvis Opii.

**Official** in Port., Lead Acetate, 5; Extract of Opium, 1; Extract of Liquorice, 14.

**SUPPOSITORIA PLUMBI COMPOSITA.** COMPOUND LEAD SUPPOSITORIES.

3 grains of Lead Acetate, and 1 grain of Opium, in each with Oil of Theobroma.

**UNGuentum PLUMBI ACETATIS.** LEAD ACETATE OINTMENT.

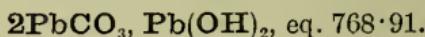
Lead Acetate, in fine powder, 20 grains; Paraffin Ointment, white, 480 grains. (1 in 25)

Now 1 in 25 instead of 1 in  $37\frac{1}{2}$ , and made with White Paraffin Ointment in place of Benzoated Lard.

**Official** in Austr. and Hung., Lead Acetate 3, Lard 150, White Wax 50, Water 10; Dan., Lead Acetate 1, Benzoated Lard 9 Norw., Lead Acetate 1, Olive Oil 14, Yellow Wax 5.

**PLUMBI CARBONAS.**

LEAD CARBONATE.



An odourless and tasteless heavy white opaque powder, or in readily pulverisable masses.

**Solubility.**—Insoluble in Water; soluble, with effervescence, in Diluted Nitric Acid and in Diluted Acetic Acid.

**Medicinal Properties.**—Employed externally as an astringent and sedative, or as an ointment for ulcers and inflamed and excoriated surfaces.

**Official Preparation.**—Unguentum Plumbi Carbonatis.

**Official** in all the Foreign Pharmacopœias except Ital.; Ger., Cerussa; Fr., Carbonate de Plomb; Mex., Carbonato de Plomo; Port., Alvaiade; Span., Albayalde Cerusa.

**UNGuentum PLUMBI CARBONATIS.** LEAD CARBONATE OINTMENT.

Lead Carbonate, 1; Paraffin Ointment, white, 9.

Now 1 in 10 instead of 1 in 8, and White Paraffin Ointment used in place of Simple Ointment.

**Official** in Austr., Hung., Norw., Russ. and Swed., 1 in 3; Belg., 1 in  $6\frac{1}{4}$ ; Dan.,  $3\frac{1}{2}$  in 10; Dutch, Mex. (Unguento Blanco simple) and Port., 1 in 5; Ger., 3 in 10; Span., 10 in 28; U.S., 1 in 10; Fr., Pommade de Carbonate de Plomb, 1 in 6.

**PLUMBI IODIDUM.**

LEAD IODIDE.

 $PbI_2$ , eq. 457·15.

A golden yellow, odourless and tasteless heavy crystalline powder. Permanent in the air. Prepared by precipitating a soluble lead salt with Potassium Iodide solution.

**Solubility.**—Sparingly soluble in cold Water; more soluble in boiling Water; soluble also in solutions of Acetates, and of Ammonium Chloride.

**Medicinal Properties.**—Used externally as a resolvent to chronic swellings and indolent joint enlargements; also in the form of pessaries.

In 'dispersible' tumours of the mamma.—*B.M.J.* '94, ii. 972.

**Official Preparations.**—Emplastrum Plumbi Iodidi, and Unguentum Plumbi Iodidi.

**Not Official.**—Pessus Plumbi Iodidi et Atropinæ, and Pessus Plumbi Iodidi et Opii.

**Official in Belg., Fr., Ital., Mex., Port., Span., Swiss and U.S.**

**EMPLASTRUM PLUMBI IODIDI.** LEAD IODIDE PLASTER.

Lead Iodide, 1; Lead Plaster, 8; Resin, 1 (1 in 10)

**UNGUENTUM PLUMBI IODIDI.** LEAD IODIDE OINTMENT.

Lead Iodide, in fine powder, 1; Paraffin Ointment, yellow, 9.

Now 1 in 10 instead of 1 in 8, and Yellow Paraffin Ointment used in place of Simple Ointment.

**Official in Fr., Mex., Port., Swiss and U.S., 1 and 9; Span., 4 and 30.**

An Ointment of Cadmium Iodide of the same strength has been recommended as a substitute; it is said not to stain the skin.

**Not Official.**

**PESSUS PLUMBI IODIDI ET ATROPINÆ.**—Lead Iodide, 10 grains; Atropine Sulphate,  $\frac{1}{15}$  grain; (Gelatin) Basis, 60 grains.

**PESSUS PLUMBI IODIDI ET OPII.**—Lead Iodide, 5 grains; Opium in powder, 2 grains; Oil of Theobroma, 12 grains.

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**PLUMBI OXIDUM.**

LEAD OXIDE.

*B.P.Syn.*—LITHARGE. $PbO$ , eq. 221·23.

In odourless and tasteless, yellow or reddish-yellow scales

or powder, prepared by the atmospheric oxidation of molten metallic Lead.

**Official Preparation.**—Emplastrum Plumbi. Used in the preparation of Liquor Plumbi Subacetatis Fortis, Plumbi Acetas, and Glycerinum Plumbi Subacetatis. **Lead Plaster** is contained in Emplastrum Hydrargyri, Emplastrum Plumbi Iodidi, Emplastrum Resinæ, and Emplastrum Saponis.

**Not Official.**—Emplastrum Lithargyri Compositum, Ung. Diachylon Hebræ, Ung. Diachylon Carbolisatum, Dr. Pearson's Cerate, and Plumbi Oleas.

**Official** in all the Foreign Pharmacopeias.

**EMPLASTRUM PLUMBI.** LEAD PLASTER. *N.O.Syn.*  
—**DIACHYLON PLASTER.**

Lead Oleate with mechanically included Glycerin, obtained by boiling together Lead Oxide, Olive Oil and Distilled Water,

Equal weights of Lead Plaster and Soap Plaster melted together form an excellent plaster for corns.

**Official** in Austr. and Hung. (Empl. Diachylon Simplex), Litharge 1, Lard 2; Belg., Litharge 2, Olive Oil 2, Water 1, Lard 2; Dan., Litharge 5, Olive Oil 10, Water 1; Dutch, Ger., Port. and Russ., Litharge, 1, Lard 1, Olive Oil 1, Water *q.s.*; Fr., Litharge 1, Lard 1, Olive Oil 1, Water 2; Ital., Norw., Span. and Swed., Litharge 1, Olive Oil 2, Water *q.s.*; Jap., Litharge 1, Olive Oil 1, Lard 1; Mex. (Emplasto Simple), Litharge 2, Lard 4, Water 3; Swiss and U.S. (Empl. Plumbi), Litharge 16, Olive Oil 30, Water *q.s.*

**Not Official.**

**EMPLASTRUM LITHARGYRI COMPOSITUM** (*Ger.*).—Lead Plaster, 12; Yellow Wax,  $1\frac{1}{2}$ ; Gum Ammoniacum, 1; Galbanum, 1; Turpentine, 1. *Ital.* has similar formula.

**UNG. DIACHYLON HEBRAE** (modified by Professor Kaposi).—Simple Lead Plaster, 1; Soft Paraffin, 1; melt with heat.

**Unguentum Diachylon** (*Hebrae*) according to Hager, Hebra's original formula for this ointment was equal parts of Lead Plaster and Linseed Oil, and this formula is given in Charing Cross Hospital Pharm.; but the majority of the Hospital formulas are made with Soft Paraffin or a mixture of Hard and Soft Paraffin, whilst some employ Olive Oil. It is also known as **Unguentum Plumbi Oleatis**.

Unguentum Diachylon is **Official** in Austr. Add., Litharge 25, Olive Oil 50, Lard 50, Lavender Oil 2; Ger. and Russ., Lead Plaster 1, Olive Oil 1; Swed., Lead Plaster 13, Liquid Paraffin 7; Swiss, Lead Oxide 25, Olive Oil 75, Benzoin 2; U.S., Lead Plaster 50, Olive Oil 49, Lavender Oil 1.

**UNGUENTUM DIACHYLON CARBOLISATUM.**—Liquid Carbolic Acid, 1; Diachylon Ointment, 49.

**DR. PEARSON'S CERATE.**—Lead Plaster 4, Yellow Beeswax 1, Oil of Almonds 3 : Melt and mix.

**PLUMBI OLEAS.**—Lead Acetate, 280 grains; dissolve in Distilled Water, 40 fl. oz.; add slowly Solution of Sodium Oleate (1 Castile Soap in 20), 20 fl. oz.; warm gently, wash by decantation, collect and dry.

Melted with equal parts of Lard, Lard Oil or Olive Oil, to form an ointment.

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## PLUMBI SUBACETATIS LIQUOR FORTIS.

STRONG SOLUTION OF LEAD SUBACETATE.

*B.P.Syn.*—GOULARD'S EXTRACT.

A clear colourless heavy liquid, sp. gr. 1·275; having a sweet astringent taste. It is a solution of Lead Subacetate,  $Pb_2O(C_2H_3O_2)_2$ , eq. 543·74 in Water, and is prepared by boiling 5 of Lead Acetate, and 3½ of powdered Lead Oxide in 20 of Distilled Water for 30 minutes, maintaining the volume of the liquid by addition of Distilled Water, filtering and making up to 20 with Distilled Water.

**Medicinal Properties.**—When largely diluted, as in Lotio Evaporans, it is used externally as an astringent and sedative for inflammation arising from sprains, bruises, etc. Sometimes used as an astringent gargle ( $\frac{1}{2}$  fl. drin. to 6 fl. oz. of Rose Water). A good astringent application to external piles is:—Strong Solution of Lead Subacetate, 2 to 3 fl. drm.; Solution of Morphine Acetate, 3 fl. drm.; Distilled Water to 6 fl. oz.

**Incompatibles.**—Hard Water, mineral Acids, vegetable Acids, Alkalies, Chlorides, Iodides, all astringents, preparations of Opium, and Mucilage of Acacia.

**Official Preparations.**—Glycerinum Plumbi Subacetatis, Liquor Plumbi Subacetatis Dilutus, and Unguentum Glycerini Plumbi Subacetatis.

**Not Official.**—Cremor Lithargyri, Lotio Plumbi Evaporans, Lotio Plumbi Evaporans cum Morphia, Lotio Plumbi Lactatis, Unguentum Plumbi Tannici and Glycerinum Tannatis Plumbi.

**Antidotes.**—Wash out the stomach or give an emetic; Sodium or Magnesium Sulphate; liberal libations of Milk, or White of Egg mixed with Water; Opium or Belladonna in Lead colic.

A course of Potassium Iodide is useful in eliminating Lead from the system.

L. '81, ii. 779, gives an unusual source of Lead poisoning, from shot found in a bottle full of Port Wine; an appreciable quantity of Lead was found in solution.

Official in all the Foreign Pharmacopœias.

**GLYCERINUM PLUMBI SUBACETATIS.** GLYCERIN OF LEAD SUBACETATE.

Lead Acetate, 5; Lead Oxide, in powder,  $3\frac{1}{2}$ ; Glycerin, 20; Distilled Water, 12. Mix. Boil for a quarter of an hour; filter; evaporate at a temperature not exceeding  $222^{\circ}$  F. ( $105.5^{\circ}$  C.) until the product weighs  $32\frac{1}{4}$ , and has a sp. gr. of 1.48.

This is more conveniently made with half the quantity of distilled Water.

**Official in Port., Solution 1, Glycerin 9.**

**LIQUOR PLUMBI SUBACETATIS DILUTUS.** DILUTED SOLUTION OF LEAD SUBACETATE. *B.P.Syn.*—GOULARD'S LOTION; GOULARD WATER. *N.O.Syn.*—AQUA VEGETO-MINERALIS GOULARDI, AQUA SATURNINA, AQUA DE VEGETO.

Strong Solution of Lead Subacetate, 2 fl. drm.; Alcohol (90 p.c.), 2 fl. drm.; Distilled Water, *q.s.* to make 20 fl. oz.  
(1 in 80)

**Official in all the Foreign Pharmacopœias.**

**UNGUENTUM GLYCERINI PLUMBI SUBACETATIS.** LEAD SUBACETATE OINTMENT.

Glycerin of Lead Subacetate (by weight), 1; Paraffin Ointment, white, 5. (1 in 6)

**Official in Belg.** (Unguent. Subacetatis Plumbi), 1 in 3; Dutch (Ung. Plumbici Basicci), 1 in 2; Fr. (Cérat Saturné); Ital. (Pomata con Acetato di Piombi); Ger. and Swiss (Unguentum Plumbi), 1 in 10; Russ. (Ung. Plumbi Acetici), 1 in 12; Swed. (Ung. Subacetatis Plumbici), 3 in 20; U.S. (Ceratum Plumbi Subacetatis), 1 in 5.

**Not Official.**

**CREMOR LITHARGYRI.**—Solution of Lead Subacetate, 1; Cream, 7. Mix.

Useful as an application in eczema.

**LOTIO PLUMBI EVAPORANS.**—Strong solution of Lead Acetate, 2 fl. drm.; Rectified Spirit,  $1\frac{1}{2}$  fl. oz.; Rose Water to 8 oz.

**LOTIO PLUMBI EVAPORANS CUM MORPHIA.**—The Solution given above, 7 fl. oz.; Solution of Morphine Acetate, 1 fl. oz.

This is an improvement on the old Lead and Opium Solution, with its coloured deposit of Lead Meconate.

**LOTIO PLUMBI LACTATIS.**—Solution of Lead Subacetate, 1 fl. drm.; Salicylic Acid, 2 grains; Milk to 2 fl. oz.—*Middlesex.*

**UNGUENTUM PLUMBI TANNICI (Ger.).**—Tannic Acid 1, Liquor Plumbi 2, Lard 17.

Similar preparations with Vaseline are given in Hung., Russ. Swed. and Swiss.

## GLYCÉRINUM TANNATIS PLUMBI.

Belg., freshly precipitated Lead Tannate 3, Glycerin of Starch 2.

This preparation has been recommended for bed-sores and sore nipples.

## PODOPHYLLI RHIZOMA.

PODOPHYLLUM RHIZOME.

B.P. *Syn.*—PODOPHYLLUM Root.

The dried Rhizome and Roots of *Podophyllum peltatum*. Imported from North America.

A yellow, greenish-yellow or yellowish-brown, amorphous powder, or amorphous masses readily reduced to powder. It has a faint peculiar odour and a bitter taste.

The variations in colour appear to depend upon the heat applied during its preparation; by distilling quickly and drying at a low temperature the lightest tints are obtained. It is difficult to find a commercial sample perfectly soluble in cold Alcohol (90 p.c.), and many will not give clear solutions even with the addition of Ammonia. The insoluble matter, however, should not exceed 10 p.c.

More than half the weight of Podophyllum Resin should dissolve in cold Chloroform, the residue being generally reckoned as medicinally inert. If the Chloroformic solution be evaporated to small bulk and poured into an excess of Ether, another inert body (Podophyllic Acid) is precipitated. If the Ether-chloroform solution be now added to a large excess of Petroleum Ether, there is precipitated a compound called **Podophyllotoxin**, supposed to contain the whole medicinal elements of the resin. For a still further fractionation of Podophyllotoxin, see *P.J.* (3) xii. 217, and *Y.B.P.* '82, 158, and for its laxative action, *L.* '94, ii. 212.

Badly adulterated specimens are frequently detected by a high percentage of ash; it may be as low as 0·5 p.c. and should not exceed 2 p.c.

The dried Rhizome and Roots of *Podophyllum Emodi*, and the **Resin** extracted from the same, dose  $\frac{1}{2}$  to 1 grain = 0·016 to 0·06 gramme, are Official in the *Ind. and Col. Add.*, for India and the Eastern Colonies.

The resin obtained from *P. Emodi* is as valuable a purgative as that obtained from *P. peltatum*, but it gelatinises with Solution of Ammonia.

This gelatinisation stated to be due to the fact that *P. Emodi* contains from one-and-a-half to three times as much Podophyllotoxin as *P. peltatum*.—*C.D.* '03, i. 630.

Indian Podophyllum stated to be twice as active as the American variety.—*M.A.* '01, 50; *L.* '98, ii. 1341.

**Medicinal Properties.**—The Resin is an active chalagogue and, in large doses, purgative; in doses of  $\frac{1}{6}$  to  $\frac{1}{4}$  grain it is a common ingredient of pills for habitual constipation associated with torpid liver.

**Prescribing Notes.**—*The Resin is given in pills, combined generally with Extract of Henbane or Belladonna to prevent griping, and associated with a purgative such as Aloes or Cocolynth; sometimes  $\frac{1}{2}$  grain of Capsicum is added to each pill. In mixtures, the addition of Aromatic Spirit of Ammonia is useful, as in Tinctura Podophylli Ammoniata.*

**Official Preparations.**—Podophylli Resina and Tinctura Podophylli.

**Not Official.**—Pilula Podophylli Composita, Tinctura Podophylli Ammoniata.

**Official in Belg., Dutch, Fr., Ital., Port., Span. and U.S.**

**PODOPHYLLI RESINA.** PODOPHYLLUM RESIN. N.O.  
*Syn.*—PODOPHYLLIN.

The Resin is extracted by Alcohol (60 p.c.), the solution concentrated in a still, and the residue poured into acidulated water to precipitate the Resin, which is washed and finally dried at a temperature not exceeding 100° F. (37.7° C.).

**Dose.**— $\frac{1}{4}$  to 1 grain = 0.016 to 0.06 grammes.

*Ph. Ger.* maximum single dose, 0.1 grammes; maximum daily dose, 0.3 grammes.

**Official in all the Foreign Pharmacopeias.**

Podophyllotoxin is **Official in the Dutch Supp.**

**TINCTURA PODOPHYLLI.** TINCTURE OF PODOPHYLLUM.

Podophyllum Resin, 320 grains; Alcohol (90 p.c.), q.s. to yield 20 fl. oz. of filtered product.

**Dose.**—5 to 15 minimis = 0.3 to 0.9 c.c.

15 minimis equals  $\frac{1}{2}$  grain of Podophyllum Resin. It is twice the strength of B.P. '85.

A corresponding preparation, **Tinctura Podophylli Indicæ** (1 in 30), dose 5 to 15 minimis = 0.3 to 0.9 c.c., is **Official in the Ind. and Col. Add.** for India and the Eastern Colonies.

#### Not Official.

**PILULA PODOPHYLLI COMPOSITA.**—Podophyllum Resin,  $\frac{1}{2}$  grain; Quinine Sulphate, 1 grain; Green Extract of Belladonna,  $\frac{1}{6}$  grain; Extract of Socotrine Aloes, 1 grain.—*University.*

**TINCTURA PODOPHYLLI AMMONIATA.**—Podophyllum Resin, 24 grains; Alcohol (90 p.c.), 2 fl. oz.; Solution of Ammonia, 1 fl. oz.; dissolve.

The Resin does not separate on the addition of Water.

**Dose.**—10 to 30 minims = 0·6 to 1·8 c.c. 1 fl. dram. contains 1 grain of the Resin.

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### Not Official.

## POTASSIUM.

POTASSIUM.

K, eq. 38·83.

Potassium was discovered by Sir Humphry Davy in 1807. It is a soft metal (sp. gr. 0·865), cutting like wax, of a silver-white colour, but tarnishes the instant it is cut, and assumes a leaden colour. It has so great an affinity for Oxygen, that when thrown upon Water it combines with it, evolving heat enough to set the liberated Hydrogen on fire, and forming a solution of Potassium Hydroxide.

The prolonged use of Potassium salts is apt to lead to a depressant effect on muscular tissue, including that of the heart; in people with weakness of that organ this should be borne in mind.

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## POTASSA CAUSTICA.

POTASSIUM HYDROXIDE.

*B.P. Syn.*—CAUSTIC POTASH; POTASSIUM HYDRATE.  
HYDRATE OF POTASSIUM, *B.P.* '85.

White, deliquescent sticks or pencils, or in hard, white, deliquescent cakes, Officially stated to consist of Potassium Hydroxide, KOH, eq. 55·71, with not more than 10 p.c. of combined Water and impurities.

On account of its intense causticity and strong action on organic tissues great caution should be used in handling it. As it rapidly absorbs both Carbonic Acid and moisture, it should be preserved from the air in well-closed, hard glass bottles.

Commercial Caustic Potash as a rule contains 1 or 2 p.e. of Chloride derived from the Carbonate used in its preparation. When required *pure* it is dissolved in Absolute Alcohol, and the solution evaporated as far as practicable without access of air to avoid absorption of Carbonic Acid. No commercial samples, however, are quite free from Carbonate.

Commercial samples examined (*P.J.* (3) xxii, 393) showed only 60 to 90 p.c. of Hydroxide. We find the general range to be between 78 and 85 p.c.

**Solubility.**—2 in 1 of Water; 1 in 3½ of Alcohol (90 p.c.); 1 in 3 of Glycerin; 1 in 4 of Alcohol (60 p.c.) (if stronger than this the Alcohol separates).

**Medicinal Properties.**—A powerful caustic and escharotic. Has been much used for the destruction of tumours and exuberant ulcers; also to stimulate unhealthy and foul ulcers.

**Prescribing Notes.**—*It has a great tendency to diffuse and attack the surrounding tissues; its action should be carefully circumscribed. When mixed with Lime, as in 'Vienna Paste' (see p. 501), it is more easily controlled.*

**Official Preparation.**—Liquor Potassæ; used in the preparation of Potassii Permanganas.

**Not Official.**—Brandish's Alkaline Solution, and Potassa cum Calce (Vienna Paste).

**Official** in all the Foreign Pharmacopœias except Dutch.

#### LIQUOR POTASSÆ. SOLUTION OF POTASH.

A clear, colourless or pale yellow, strongly alkaline solution, Officially required to contain 27 grains of Potassium Hydroxide, KOH, in 1 fl. oz., or 6·19 grammes in 100 c.c.

It should be preserved in well-stoppered glass bottles of an actinic green shade, and the stoppers may be smeared with mineral Oil to prevent fixation.

**Medicinal Properties.**—Caustic. When diluted it is antacid and antilithic. Occasionally employed as an antacid in dyspepsia, accompanied by acidity and gastralgia. It is apt to irritate the stomach, and so, to obtain all the best internal effects of Potash, the Bicarbonate and Citrate are much to be preferred. Externally as an escharotic against the bite of rabid or venomous animals; diluted, it relieves itching.

It acts powerfully on all organic matter, converting flannel into a kind of soft jelly after immersion for five or six hours.

**Dose.**—10 to 30 minims = 0·6 to 1·8 c.c., freely diluted.

**Incompatibles.**—Acids, acid salts, metallic and alkaloidal salts, the preparations of Ammonium, Belladonna, Henbane and Stramonium.

**Antidotes.**—Diluted Acetic Acid, Citric Acid, Lemon Juice, or any vegetable acids, fixed oils and demulcents; stimulants; Morphine for pain; neither stomach-tube nor emetics are to be used.

**Official** in U.S., sp.gr. 1·086 (5 p.c.); Belg., sp.gr. 1·330 to 1·340; Ger., sp. gr. 1·138 to 1·140 (15 p.c.); Russ., sp. gr. 1·126 to 1·130 (15 p.c.); Span., sp. gr. 1·334; Swed., sp. gr. 1·225 to 1·235 (25 p.c.); Swiss, sp. gr. 1·33.

#### Not Official.

**BRANDISH'S ALKALINE SOLUTION.**—American Pearl-ash, 6 lbs.; freshly prepared Quicklime, 2 lbs.; Wood-ashes, 2 lbs.; boiling

Water, 6 gallons ; or 6, 2, 2, and 60 parts ; add first the Lime, then the Pearl-ash, and lastly the Wood-ashes to the boiling Water, stir well together, let it stand twenty-four hours, and decant the clear liquor.

**Dose.**— $\frac{1}{2}$  to 2 fl. drm. = 1.8 to 7.1 c.c. in Milk. Given for scrofulous conditions.

**POTASSA CUM CALCE (Vienna Paste).**—Potassium Hydroxide and Calcium Oxide, equal weights ; powder and mix ; it is made into a paste with Alcohol (90 p.c.).

The paste is spread on the part to be cauterised, and is allowed to remain for ten to fifteen minutes, while the surrounding skin is protected by adhesive plaster. It is also used in the treatment of lupus. It is not so likely to run as Caustic Potash alone.

**Official in U.S.;** Dutch Supp., Potassium Hydroxide 27, Calcium Oxide 23 ; Ital., Potassium Hydroxide 5, Lime 6 ; Mex. (Pasta de Viena), Potassium Hydroxide 1, Lime 1.

Potassa cum Calce in cylinders, consisting of two parts of Potassa and 1 of Lime for the use of obstetricians.

## POTASSA SULPHURATA.

SULPHURATED POTASH.

*B.P. Syn.*—LIVER OF SULPHUR.

*N.O. Syn.*—HEPAR SULPHURIS.

Liver-brown, deliquescent, irregular pieces, which gradually absorb moisture and Carbonic Acid, the colour changing to greenish-yellow. It has a disagreeable odour of Sulphuretted Hydrogen when slightly moist, and an alkaline reaction. It is a mixture of various Potassium salts, chiefly Sulphides.

**Solubility.**—1 in 2 of Water.

**Medicinal Properties.**—Similar to those of Sulphur, but more energetic. Externally it is a good remedy for scabies and other parasitic cutaneous diseases ; used also for chronic eruptions, especially psoriasis and acne. Internally it is occasionally used for chronic rheumatism, bronchitis, and chronic skin diseases.

A hot bath of Sulphurated Potash relieves the itching of jaundice.—*L.* '85, ii. 1220.

**Dose.**—1 to 5 grains = 0.06 to 0.32 grammie.

**Not Official.**—Balneum Sulphuretum,

**Official in all the Foreign Pharmacopœias.**

**Not Official.**

**BALNEUM SULPHURETUM.**—Sulphurated Potash, 4 oz. ; Water, 30 gallons ; dissolve.

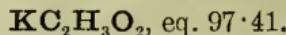
Used as a solvent and stimulant in cases of psoriasis, etc.

This is not quite so agreeable as the Barèges waters, which may be made artificially as follows:—Sodium Sulphide, Sodium Carbonate, and Sodium Chloride, of each 20 grains to one gallon. But a much stronger solution is often used.

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## POTASSII ACETAS.

POTASSIUM ACETATE.



White, almost odourless, deliquescent crystals, or crystalline masses, or as a white, deliquescent, granular powder.

**Solubility.**—2 in 1 of Water; 1 in 2 of Alcohol (90 p.c.).

**Medicinal Properties.**—Used as a diuretic in dropsy, chiefly renal, and in febrile diseases; as an antilithic in gout and the uric acid diathesis.

**Dose.**—10 to 60 grains = 0·65 to 4 grammes.

**Prescribing Note.**—*Best administered in simple solution, with a little Syrup if desired.*

**Official** in all the Foreign Pharmacopœias except Austr. and Ger., the former contains a *solution*, sp. gr. 1·200; Dutch Supp., Ger., Hung., Ital. and Russ. have also a solution, sp. gr. 1·176 to 1·180 (33 p.c.); Swiss has also Liquor, sp. gr. 1·16 to 1·17.

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Not Official.

## POTASSII BENZOAS.

A white crystalline powder; soluble 1 in  $1\frac{1}{2}$  of Water; 1 in 18 of Alcohol (90 p.c.). Useful in cystitis of the Lithic Acid diathesis.

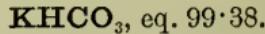
**Dose.**—15 to 20 grains = 1 to 1·3 gramme.

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## POTASSII BICARBONAS.

POTASSIUM BICARBONATE.

*B.P. Syn.*—POTASSIUM HYDROGEN CARBONATE.



Colourless, transparent, monoclinic prisms, or as a white crystalline powder, odourless and having a saline and alkaline taste. It is permanent in the air.

**Solubility.**—1 in 3·2 of Water. Insoluble in Alcohol (90 p.c.).

**Medicinal Properties.**—Antacid, antilithic, and diuretic. Used in dyspepsia as an antacid, and in urinary affections where there is a tendency to deposit Uric Acid; in the acute or inflammatory stage of gonorrhœa there is no better remedy, as it renders the urine alkaline and unirritating. In bronchitis and pneumonia it renders the secretion less tenacious; in influenza it has been given with success.

20 grains are prescribed in effervescence with 15 grains of Citric Acid.

Closely resembles the Carbonate, but without its irritant qualities.

Potassium salts delay the conversion of gelatinous Sodium Biurate into the crystalline variety and when the conversion is once started, it is slowed by the presence of these salts. Potassium salts exercise most influence.—*L. '00, i. 931.*

**Dose.**—5 to 30 grains = 0·32 to 2 grammes.

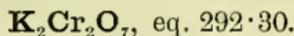
**Official in** Belg., Fr., Dutch Supp., Ger., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.

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## POTASSII BICHROMAS.

### POTASSIUM BICHROMATE.

*B.P. Syn.*—POTASSIUM DICHROMATE; RED CHROMATE OF POTASSIUM.



Large, orange-red, odourless, translucent, prismatic crystals, having a bitter taste. Permanent in the air.

**Solubility.**—1 in 10 of Water; 5 in 6 of boiling Water.

**Medicinal Properties.**—A powerful irritant poison in over doses, rarely used in medicine, but extensively in the arts.

Highly recommended by Fraser in dyspepsia and gastric ulcer (*L. '94, i. 923*), and by Bradbury.—*L. '95, ii. 671.*

**Dose.**— $\frac{1}{10}$  to  $\frac{1}{5}$  of a grain = 0·006 to 0·013 grammes, in pills with 'Massa Kaolin.'

**Official Preparation.**—Used in the preparation of Acidum Chromicum.

**Antidotes.**—Stomach-tube or emetics, Magnesium Carbonate or Chalk, albuminous and demulcent drinks.

**Official in** Dutch Supp., Fr., Ger., Port., Russ., Span., Swed., Swiss and U.S.

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**POTASSII BROMIDUM.**

POTASSIUM BROMIDE.

N.O.Syn.—BROMURETUM KALICI.

**KBr**, eq. 118·18.

Colourless or white, odourless, cubical crystals, possessing a strong, characteristic, saline taste. They are permanent in the air.

**Solubility.**—10 in 17 of Water, and measures 20; 1 in 1 of boiling Water; 1 in 95 of Alcohol (90 p.c.); 1 in 17 of boiling Alcohol (90 p.c.).

**Medicinal Properties.**—Sedative, hypnotic, anaphrodisiac. Very successful in epilepsy, in hysteria, and in convulsions generally. Useful in insomnia, sea-sickness and the sickness of pregnancy, also in head-ache and over-worked brain, in migraine and in neuralgia. It exerts a sedative influence on the generative organs. Useful in some forms of mania and nymphomania. Relieves in some cases of whooping-cough and spasmodic asthma, both in children and adults. This salt, as well as the Ammonium Bromide, is used to produce anaesthesia of the larynx.

Bromides still the most potent agents for the treatment of idiopathic epilepsy. No special advantage noticed in giving the mixed Potassium, Sodium and Ammonium Bromides. Potassium salt usually given, but when it appears to cause undue depression, the Ammonium or Sodium salt is substituted. In nocturnal epilepsy, a single dose should be given an hour before bed-time, and two hours before an attack is due when the fits recur about the same time in the day. As a rule, better to increase the single dose than to give the same amount in divided doses several times a day.—*L.* '03, i. 440; *B.M.J.* '03, i. 371.

Bromide rash treated by use of arsenical waters, milk diet and a poultice containing Boric Acid applied locally.—*T.G.* '99, 593.

On its use combined with Sodium Salicylate in headache.—(Brunton) *Pr.* lii. 101.

By combining with it Arsenic in small doses, the unpleasant effects known as 'Bromism' may be prevented or reduced.

Butter-milk as a local application to the acne-like eruption produced by administration of Bromides.—*L.* '02, ii. 1724.

**Dose.**—5 to 30 grains = 0·32 to 2 grammes.

**Incompatibles.**—Any oxidising agents are liable to set free the Bromine; Spiritus Ätheris Nitrosi.

**Official Preparation.**—Used in the preparation of Acidum Hydrobromicum Dilutum.

**Not Official.**—Sal Bromatum Effervescens.

**Official** in all the Foreign Pharmacopœias,

## Not Official.

**SAL BROMATUM EFFERVESCENS.**—An effervescent preparation containing about 8 of Potassium Bromide, 8 of Sodium Bromide and 4 of Ammonium Bromide in 60.

**Calcium Bromide.**—A white, very deliquescent salt, readily soluble in Water and Alcohol (90 p.c.), which has been introduced as a substitute for Potassium Bromide, but which is not much prescribed.

**Dose.**—15 to 30 grains = 1 to 2 grammes.

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**POTASSII CARBONAS.**

POTASSIUM CARBONATE.

*B.P.Syn.*—SALT OF TARTAR.

A white, deliquescent, crystalline, or granular powder,  $K_2CO_3$  (eq. 137·21), Officially stated to be associated with either one or two molecules of Water. It is present in the ashes of plants.

Should be preserved in well-closed bottles.

**Solubility.**—4 in 3 of Water, and measures  $4\frac{1}{2}$ . Insoluble in Absolute Alcohol.

**Medicinal Properties.**—Antacid, diuretic and anti-lithic. Little used internally on account of its irritant and nauseous properties. Externally it is used as a lotion in eczema and urticaria.

**Dose.**—5 to 20 grains = 0·32 to 1·3 gramme.

**Official Preparations.**—Contained in Decoctum Aloes Compositum, Liquor Arsenicalis, Mistura Ferri Composita, Unguentum Potassii Iodidi. Used in the preparation of Iodoform, Liquor Bismuthi et Ammonii Citratis, Potassa Caustica, Potassa Sulphurata, Potassii Acetas, Potassii Bicarbonas, Potassii Citras and Potassii Tartras.

**Official** in all the Foreign Pharmacopœias. Ger., Russ. and Swed., include a **crude** Carbonate; Ger., a  $33\frac{1}{3}$  p.c. Liquor; Swed., a solution, 20 p.c.

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**POTASSII CHLORAS.**

POTASSIUM CHLORATE.

 $KClO_3$ , eq. 121·66.

Colourless, glistening, translucent, monoclinic prisms or plates, or as a white, odourless powder, possessing a cooling saline taste. It should be kept in well-stoppered bottles.

On account of the ready manner in which it evolves Oxygen, it should be handled with great caution, great care being taken to avoid friction or any sudden percussion when mixing it with readily oxidisable or inflammable substances. When triturated with certain substances, e.g. Sulphur, Sugar, Tannic Acid and Antimony Sulphide, it forms explosive mixtures. It has also been known to explode whilst being compressed into tablets.

**Solubility.**—1 in 16 of cold Water; 1 in 2 of boiling Water; 1 in 1700 of Alcohol (90 p.c.); 1 in 152 of Alcohol (60 p.c.).

**Medicinal Properties.**—A local stimulant. A strong solution, 1 or 2 in 40 of Water, is the best wash for the mouth when the gums are spongy, inflamed and irritable, and for ulcerative stomatitis; it relieves the tenderness and induces a firmness of the gums; it is also an excellent gargle in tonsillitis. A solution of  $\frac{1}{2}$  dram. in 4 fl. oz. Water, has been used as an injection into the bladder for vesical catarrh, and as a lotion for unhealthy ulcers. The powder is applied to aphæ in the mouth. Internally it is given to prevent the tendency to miscarriage, and to foetal death. In young people it should be used with great care and in small doses, if given at all.

**Dose.**—5 to 15 grains = 0·32 to 1 grammie.

10 grains three times daily for six months with no ill effects, in habitual death of the foetus in the later months of pregnancy. *L. '02, ii. 459.*

Hyperplasia of the foetal thyroid in cases where the mother had been given Potassium Chlorate.—*B.M.J. '03, i. 657, 874.*

As a galactagogue, *T.G. '93, 322*; internally 7 dram. taken by mistake caused death.—*L. '79, i. 206.*

**Incompatibles**—Charcoal, Sulphur and Ferrous salts. Hydrochloric Acid causes the evolution of Chlorine; other mineral acids, of various chlorous-smelling oxy-compounds; organic acids the same but much more slowly.

**Official Preparation.**—Trochiscus Potassii Chloratis; used in the preparation of Potassii Permanganas.

**Not Official.**—Gargarisma Potassii Chloratis, Pulvis Potassii Chloratis Compositus and Sodii Chloras.

**Official in** all the Foreign Pharmacopœias.

### TROCHISCUS POTASSII CHLORATIS. POTASSIUM CHLORATE LOZENGE.

3 grains of Potassium Chlorate in each, with Rose Basis.

**Dose.**—1 to 6 lozenges.

Potassium Chlorate is supplied in tablets or compressed discs, also combined with Borax and with Cocaine.

**Official in Belg.** (Tabellæ),  $1\frac{1}{2}$  grains; Dutch,  $1\frac{1}{2}$  grains; Fr. (Tablettes),  $1\frac{1}{2}$  grains; Ital. (Pastiglia),  $1\frac{1}{2}$  grains; Mex. (Pastillas),  $1\frac{1}{2}$  grains; Port. (Pastilhas),  $1\frac{1}{2}$  grains; Span. (Taletas),  $1\frac{1}{2}$  grains; Swiss (Pastilli),  $1\frac{1}{2}$  grains; U.S., about  $4\frac{1}{2}$  grains in each lozenge.

### Not Official.

**GARGARISMA POTASSII CHLORATIS.**—Potassium Chlorate, 1 drm.; Glycerin,  $\frac{1}{2}$  fl. oz.; Water to 6 fl. oz.

**PULVIS POTASSII CHLORATIS COMPOSITUS.**—Potassium Chlorate, 1; Borax, 1; Sodium Bicarbonate, 1; White Sugar, 2; all in powder. Mix. A measured teaspoonful to be dissolved in half a tumbler (5 fl. oz.), of tepid Water; half the solution to be injected with a syringe along the floor of each nostril night and morning. After use blow the nose freely.—*Central Throat.*

**SODII CHLORAS.**—Colourless, translucent crystals, or a white crystalline powder. Soluble in about its own weight of Water, and in five times its weight of Glycerin.

The same remarks with regard to caution in its use apply to this as to the Potassium salt.

Official in U.S.

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## POTASSII CITRAS.

POTASSIUM CITRATE.

$K_3C_6H_5O_7$ , eq. 304·11.

Translucent, prismatic crystals, or as a white, granular, deliquescent powder, possessing a cooling saline taste. It should be preserved in well-stoppered bottles.

**Solubility.**—10 in 6 of Water, and measures 11; 1 in 2 of Glycerin; 1 in 9 of Alcohol (60 p.c.), but if more of the salt is added the Alcohol separates from the watery solution.

**Medicinal Properties.**—Antacid, mild diaphoretic and diuretic. It is a valuable saline febrifuge, increasing the secretion of the kidneys, rendering it alkaline, and so preventing the precipitation of Uric Acid; its free administration in acute nephritis is strongly advocated by Fothergill. Useful in gout and rheumatism. Given as a drink in scurvy.

Free administration combined with Colchicum in the treatment of gout.—*L.* '99, ii. 1362.

**Dose.**—10 to 40 grains = 0·65 to 2·6 grammes.

Official in Dutch Supp., Port. and U.S.

Various solutions of Potassium Citrate occur as follows: Belg., Hung. and Russ., Potio Riverii; Ger., Potio Riveri made with Sodium Citrate; Dan. and Norw., Julapium Salinum; Fr.,

Potion Gazeuse; Port., Soluto de Citrato de Potassa; U.S., Liquor Potassii Citratis.

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Not Official.

### POTASSII CYANIDUM.

**KCN**, eq. 64·68.

White, opaque, deliquescent masses, or as a white, granular, deliquescent powder, having the odour of Hydrocyanic Acid. The pure salt can be obtained in white cubical crystals. It is intensely poisonous.

It should be kept in well-stoppered bottles.

**Solubility**.—1 in  $2\frac{1}{4}$  of Water; almost entirely 1 in 100 of Alcohol (90 p.c.).

Ordinary fused Cyanide only contains about 40 p.c. of real Cyanide, but there is no difficulty in obtaining it from 95 to 99 p.c. *B.P. Appendix* requires it to contain at least 90 p.c.

**Official** in Belg., Fr., Mex., Port., Span. and U.S.

It is useful to remove the black stains on the skin caused by Silver Nitrate.

Entomologists use it with gypsum to make poison bottles for killing insects without injuring their delicate structure; for this purpose dissolve 1 of the Cyanide in  $1\frac{1}{2}$  of Water, and add 2 of Plaster of Paris. This mixture stirred and poured whilst liquid into a wide-mouthed bottle, forms a hard floor, which is constantly giving off vapour.

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Not Official.

### POTASSII FERROCYANIDUM.

*Syn.*—YELLOW PRUSSIATE OF POTASH.

**K<sub>4</sub>FeC<sub>6</sub>N<sub>6</sub>**, 3H<sub>2</sub>O, eq. 419·66.

Large, translucent, lemon-yellow, soft, table-shaped crystals or groups of crystals. Slightly efflorescent in dry air.

**Solubility**.—1 in 4 of Water; insoluble in Alcohol (90 p.c.).

**Official** in Belg., Fr., Mex. Port., Span. and U.S.

Zinc Ferrocyanide is Official in Dutch Supp.

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### POTASSII IODIDUM.

POTASSIUM IODIDE.

**KI**, eq. 164·73.

Colourless translucent, or white opaque, cubical crystals, permanent in dry air. It has a characteristic saline, sub-

sequently somewhat bitter, metallic taste, and a faintly alkaline reaction.

It should be preserved from air and light in well-stoppered bottles, and kept in a cool place.

**Solubility.**—4 in 3 of Water, and measures 4; 1 in 10 of Alcohol (90 p.c.); 1 in 3 of Glycerin.

**Medicinal Properties.**—Alterative, deobstruent, diuretic, expectorant. It is useful in cases where Iodine is indicated, and being less irritating is much preferred for internal administration. Useful especially in secondary and in tertiary syphilis and in all diseases associated with syphilis, such for example as locomotor ataxy. For secondary symptoms 60 grains in solution may be given in the twenty-four hours. It reduces chronic inflammations and swellings, effusions and glandular enlargements, and is useful in goitre; also in bronchitic asthma, aortic disease, endocarditis, internal aneurism and angina pectoris; chronic rheumatism and gout; lumbago, sciatica, psoriasis and actinomycosis. May be given with Quinine dissolved by Sulphuric or Phosphoric Acid, but not with Nitro-hydrochloric Acid, as the eliminated Chlorine decomposes it and makes an unsightly mixture. Combined with Nux Vomica the system bears it better. It is useful in the elimination of Lead in cases of chronic Lead poisoning; also in treating chronic mercurial poisoning. *See also under 'Iodum.'*

In cretinism.—*L.* '93, ii. 1545.

In actinomycosis.—*T.G.* '94, 62; *B.M.J.E.* '93, ii. 23; '95, ii. 64; *L.* '96, i. 1553; '97, i. 735.

Sodium or Potassium Iodide when given to man by the stomach in ordinary doses has no depressing effect on the action of the heart, or on the blood pressure in the arteries.—*B.M.J.* '01, ii. 1524.

The opinion is expressed that Iodides are of no value in the treatment of aneurysm, and that they are even hurtful in arteriosclerosis, but the great bulk of medical opinion and experience is directly contrary to this.—*B.M.J.* '01, ii. 1522.

Its regular use in small doses, with the occasional exhibition of Strophanthus, often gives considerable relief in treatment of cardio-arterial disease.—*B.M.J.* '01, ii. 1057.

60 to 80 grains three times daily, successful in the treatment of thoracic aneurysms.—*L.* '03, ii. 528.

Good results from its prolonged administration combined with one of the guaiacol preparations in acute rheumatoid arthritis.—*B.M.J.* '01, ii. 1039.

2 c.c. of a 3 p.c. solution injected locally on alternate days in a case of syphilitic ulceration of the leg.—*B.M.J.E.* '03, ii. 40.

Case of Iodine rash after administration of three doses of 10 grains each.—*L.* '04, i. 421.

**Dose.**—5 to 20 grains = 0·32 to 1·3 grammes.

**Prescribing Notes.**—*Best given with Tinetur of Orange and Spirit of Chloroform, in Water, or with Tinetur of Cinehona. It is also given with Fowler's Solution to prevent the rash sometimes produced.*

It is better borne when given with Potassium Acetate, or when administered alternately with Ferrous Iodide.—*L.* '88, i. 1019.

**Incompatibles.**—Spiritus Ætheris Nitrosi, Bismuthi Subnitras.

**Official Preparations.**—Linimentum Potassii Iodidi cum Sapone and Unguentum Potassii Iodidi ; contained in Liquor Iodi Fortis, Tinctura Iodi and Unguentum Iodi. Used in the preparation of Hydrargyri Iodidum Rubrum and Plumbi Iodidum.

**Not Official.**—Linimentum Potassii Iodidi cum Sapone (*B.P.* '67).

**Official in all the Foreign Pharmacopœias.**

### **LINIMENTUM POTASSII IODIDI CUM SAPONE. LINIMENT OF POTASSIUM IODIDE WITH SOAP.**

Curd Soap, recently prepared and in shavings, 2 oz. ; Potassium Iodide, 1½ oz. ; Glycerin, 1 fl. oz. ; Oil of Lemon, 1 fl. dram. ; Distilled Water, 10 fl. oz. Reduce the Curd Soap to fine shreds ; mix it with the Distilled Water and Glycerin in a porcelain dish on a water-bath ; when the Soap is dissolved, pour the liquid into a mortar in which the Potassium Iodide has previously been powdered ; mix briskly by trituration ; continue the trituration until the mixture is cold ; set aside for an hour ; then rub well the Oil of Lemon into the cream-like product.

When first prepared it is very bulky, but after it has been made some time it occupies a much smaller space, and this is apt to cause trouble with patients. The difference is due to the quantity of air incorporated in it by the trituration, and is so great that it would be quite possible at different times for the same weight of Liniment to fill a 1 oz. pot and a 4 oz. pot.

The advantages of this Liniment are that it does not stain nor does it irritate when rubbed on the skin ; it is employed in enlargement of the joints, and in indurated glands, especially the cervical glands.

**Official in Swiss** (Opodeldoc Iodatum), Lard or Butter, 50 ; Alcohol (95 p.c.), 25 ; Solution of Caustic Soda, 25 ; saponify and dissolve in Alcohol, 800 ; Sodium Iodide, 50 ; Water, 50 ; Oil of Lemon, 10. Swiss has also Opodeldoc Iodatum Liquidum.

**UNGUENTUM POTASSII IODIDI.** POTASSIUM IODIDE OINTMENT.

Potassium Iodide, 50; Potassium Carbonate, 3; Distilled Water (by weight), 47; Benzoated Lard, 400. Add the solution to the Lard in a slightly warmed mortar. (1 in 10)

Official in Dan., Dutch, Fr., Ger., Hung., Ital., Norw., Port., Russ. and Swiss, 1 in 10; Ger. and Russ., with Sodium Thiosulphate; Span., 1 in 9½; Mex., Pomada de Yoduro de Potasio, 1 in 8½; U.S., 1 in 8½ with Sodium Thiosulphate.

**Not Official.**

**LINIMENTUM POTASSII IODIDI C. SAPONE** (B.P. 1867).—Hard Soap, 1½ oz.; Potassium Iodide, 1½ oz.; Glycerin, 1 fl. oz.; Oil of Lemon, 1 fl. dram.; Water, 10 fl. oz. ‘Put the Glycerin, Iodide, and 3 fl. oz. of Water into a clean 20-oz. wide-mouthed bottle; then dissolve the soap (in shavings) in the 7 fl. oz. of Water in a jar by the heat of a water-bath; strain the solution whilst hot through muslin into the bottle containing the Iodide, etc.; allow to stand for two or three minutes, until the bottom of the soap solution is a little opaque, then mix by agitation; lastly add the Oil of Lemon, shaking briskly, and, after agitating at intervals for two hours or more, a liniment in the form of a soft white jelly will result, and remain so; if it should not, a small addition of Water will generally perfect it.’

This formula is that of B.P. '67, but the manipulation has been modified; when made properly it gives satisfaction.

**POTASSII NITRAS.**

POTASSIUM NITRATE.

B.P. *Syn.*—NITRE, SALTPETRE.

N.O. *Syn.*—AZOTATE DE POTASSE.

**KNO<sub>3</sub>**, eq. 100·41.

Colourless, transparent, rhombic prisms, or a white odourless, crystalline powder, having a cooling saline taste. Permanent in the air. It is obtained by purifying Crude Nitre, or from Sodium Nitrate.

**Solubility.**—1 in 4 of cold Water; 2½ in 1 of boiling Water; sparingly in Alcohol (90 p.c.).

**Medicinal Properties.**—Sometimes given as a diuretic and diaphoretic, but the Acetate and Citrate are much to be preferred. Useful as a gargle in relaxed sore throat. Potassium Nitrate 5 grains, Potassium Bicarbonate 20 grains, taken, during effervescence, with Citric Acid 15 grains, in a small tumbler of cold Water, is a pleasant cooling

draught in febrile excitement. Charta Nitrata is used in spasmodic asthma.

15 grains of Potassium Nitrate with  $\frac{1}{2}$  grain of Sodium Nitrite useful for lessening high arterial tension and arresting epistaxis; 15 grains of Potassium Nitrate along with Potassium Bicarbonate and  $\frac{1}{2}$  grain of Sodium Nitrite; useful for the same purpose in gouty subjects.—*L.* '02, ii. 331; *B.M.J.* '02, ii. 504.

**Dose.**—5 to 20 grains = 0·32 to 1·3 grammes.

**Official Preparations.**—Contained in Argenti Nitratas Induratus and Argenti Nitratas Mitigatus. Used in the preparation of Acidum Nitricum.

**Not Official.**—Sal Prunella, Charta Nitrata, Charta Nitrata et Chlorata.

**Official** in all the Foreign Pharmacopœias.

### Not Official.

**SAL PRUNELLA.**—Potassium Nitrate fused and moulded into balls.

**CHARTA NITRATA** (Belg., Dan., Fr., Ger., Ital., Jap., Norw., Port., Swed., Swiss and U.S.).—Soak porous paper in a saturated solution of Nitre, and dry. Roll it up and burn in a candlestick. Used in asthma.

The paper is sometimes impregnated also with Compound Tincture of Benzoin, Spirit of Camphor, Oils of Cassia, Cinnamon and Santal, and Tincture of Sumbul.

**CHARTA NITRATA ET CHLORATA.**—Soak porous paper in a saturated solution of Potassium Nitrate and Potassium Chlorate, and dry. Used in asthma.

## POTASSII PERMANGANAS.

POTASSIUM PERMANGANATE.

*N.O. Syn.*—KALIUM HYPERMANGANICUM.

$K_2Mn_2O_8$ , eq. 313·74.

Slender, dark, purple, odourless, prismatic crystals, possessing a purplish-blue metallic lustre, and a peculiar characteristic taste, at first sweet and afterwards unpleasant and somewhat astringent.

It should be kept in well-stoppered bottles, and protected as much as possible from the light, and from dust. When pure it is a permanent salt.

It should be handled with caution as when brought into contact with easily oxidisable substances, e.g. Alcohol, Gallic and Tannic Acid, Glycerin, essential Oils, etc., it readily parts with its oxygen, the action being very violent and frequently attended

by explosion. Its solutions when mixed with Hydrogen Peroxide evolve nauseant Oxygen.

**Solubility.**—1 in 18 of Water; 1 in 3 of boiling Water.

**Medicinal Properties.**—A powerful deodorant and antiseptic. Useful internally in amenorrhœa, and in anaemia; also in typhoid and dysentery. Externally, as a caustic and deodoriser, to foul ulcers and chancres. Useful as a wash in ozæna; and as an antiseptic gargle in throat affections.

In ease of snake bites, Lauder Brunton recommends that the wound should be scraped with a clean knife, and then powdered crystals of Potassium Permanganate should be rubbed into the wound.

Weak solution (1 in 2000) injected in gonorrhœa.—*B.M.J.E.* '95, i. 60; *M.P.* '95, i. 431; *B.M.J.E.* '99, ii. 88.

Case of poisoning by repeated small doses (about 2 grains). Recovery.—*L.* '99, ii. 1468.

Found always a valuable remedy in snake bites if given in time. *L.* '02, ii. 1711; '03, i. 133; *P.J.* '03, i. 13.

In certain forms of menstrual suffering. Striking and permanent results obtained by its use.—*L.* '02, ii. 1757.

In the treatment of asylum dysentery, the lower bowel washed out night and morning with a weak solution (2 to 4 grains to the pint).—*L.* '02, i. 588.

In the treatment of lupus, painting with a saturated solution, or dusting with powdered Permanganate.—*B.M.J.E.* '02, i. 55; *B.M.J.* '03, ii. 194.

**Dose.**—1 to 3 grains = 0·06 to 0·2 grammes.

**Prescribing Notes.**—It can be made into a pill with *Massa Paraffini*. It is not given in solution on account of its disagreeable taste.

It is the practice to coat Permanganate pills with Sandarach varnish, but the Alcohol contained in the varnish is liable to be oxidised at the expense of the Permanganate.

**Incompatibles.**—Animal or vegetable matters, and any reducing agent.

It is an antidote to Morphine.

**Official Preparation.**—Liquor Potassii Permanganatis.

**Not Official.**—Caleii Permanganas and Sodii Permanganas.

**Official** in all the Foreign Pharmacopœias. Ital. has also a crude salt for disinfecting purposes.

### LIQUOR POTASSII PERMANGANATIS. SOLUTION OF POTASSIUM PERMANGANATE.

Dissolve 87½ grains of Potassium Permanganate in Distilled Water, *q.s.* to yield 20 fl. oz. (1 in 100)

**Dose.**—2 to 4 fl. dram. = 7·1 to 14·2 c.c.

110 minims contain 1 grain.

If it needs filtration, glass-wool is best for the purpose.

Diluted with 40 to 80 parts of Water, it is useful as a **gargle**, or as a cleansing **wash** for foul ulcers, etc.

**Official** in Mex., 1 in 500; Span., 1 in 50.

#### Not Official.

**CALCII PERMANGANAS.**—Purplish-red, crystalline masses, deliquescent and very soluble in Water. It is a powerful disinfectant and deodorant. It is stated to be less nauseous than the Potassium salt, but there is not much difference between them, in this respect.

**Sodii Permanganas** in solution, is used as a disinfectant. It is so soluble in Water, that it is difficult to crystallise.

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## POTASSII SULPHAS.

POTASSIUM SULPHATE.

$K_2SO_4$ , eq. 173·00.

Hard, transparent, colourless, six-sided, rhombic prisms, terminated by pyramids, or a white, odourless powder, having a somewhat bitter saline taste. Permanent in the air.

Potassium Sulphate was long known as **Sal Polychrestum**, and the Bisulphate (the residue from making Nitric Acid) as **Sal Enixum**.

In Scotland, Sal Polychrestum means Sulphas Potassæ à Sulphure (*Ph. Edinburgh*).

**Solubility.**—1 in 10 of cold Water, 1 in 4 of boiling Water. Insoluble in Alcohol (90 p.c.).

**Medicinal Properties.**—Mild, saline cathartic, usually operating without irritation. Generally given in combination with Rhubarb. A useful purgative in hepatic and dyspeptic affections.

**Dose.**—10 to 40 grains = 0·65 to 2·6 grammes.

**Official Preparations.**—Used in the preparation of Pilula Colocynthidis Composita and Pulvis Ipecacuanhæ Compositus. Contained in Pilula Colocynthidis et Hyoscyami, and Pilula Ipecacuanhæ cum Scilla.

**Official** in all the Foreign Pharmacopœias except Austr.

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## POTASSII TARTRAS.

POTASSIUM TARTRATE.

$K_2C_4H_4O_6$ ,  $H_2O$ , eq. 242·46.

Colourless, translucent, prismatic crystals, or as a white, crystalline, slightly deliquescent powder, having a saline and

bitter taste. It is obtained by neutralising the Acid Tartrate with Potassium Carbonate.

**Solubility.**—10 in 6 of Water. Insoluble in Alcohol (90 p.c.).

**Medicinal Properties.**—A mild, saline purgative, operating without much pain, and producing watery stools. In smaller doses, antacid, diuretic and alterative.

**Dose.**—30 to 240 grains = 2 to 16 grammes.

**Official** in all the Foreign Pharmacopœias except Austr., Swed. and U.S.

## POTASSII TARTRAS ACIDUS.

ACID POTASSIUM TARTRATE.

*B.P.Syn.*—BITARTRATE OF POTASSIUM; PURIFIED CREAM OF TARTAR.

*N.O.Syn.*—TARTARUS DEPURATUS. KALIUM HYDROTARTARICUM.  
 $KC_4H_5O_6$ , eq. 186·75.

Colourless or slightly opaque crystals, or masses of crystals, or as a white, crystalline, gritty powder, permanent in the air. Its chief source is the crude Cream of Tartar or Argol, deposited during vinous fermentation.

**Solubility.**—1 in 200 of cold Water, 1 in 16 of boiling Water. Insoluble in Alcohol (90 p.c.).

**Medicinal Properties.**—Cathartic, diuretic and refrigerant. Much used in febrile and dropsical affections; in chronic cardiac and hepatic diseases; combined with Sulphur it is useful in haemorrhoids.

'Imperial Drink' for patients suffering from the thirst accompanying chronic Bright's disease, Acid Tartrate, 1 dram.; Saccharin, 1 grain; Lemon Oil, 3 minims; boiling Water to 1 pint.—*Pr. lxvii. 656.*

**Dose.**—20 to 60 grains = 1·3 to 4 grammes.

**Official Preparations.**—Contained in Confectio Sulphuris, Trochiscus Sulphuris, and Pulvis Jalapæ Compositus. Used in the preparation of Acidum Tartaricum, Antimonium Tartaratum, Ferrum Tartaratum, Potassii Tartras, and Soda Tartarata.

**Not Official.**—Soluble Cream of Tartar.

**Official** in all the Foreign Pharmacopœias.

## Not Official.

TARTARUS BORAXATUS. TARTRATE BORICO-POTASSIQUE.  
**SOLUBLE CREAM OF TARTAR.**—Soluble cream of Tartar is a white, amorphous powder soluble in its own weight of Water.

The proportions are:—Belg., Dan., Fr., Norw. and Swed., Potassium Tartrate 2, Borax 1; Dutch, Ger. and Swiss, Potassium Acid Tartrate 5, Borax 2; dissolve the Borax and the Acid Tartrate in Water by the aid of heat, and evaporate to dryness; Ital. (Tartrato Borico-Potassico), proportions not given; Span., Potassium Acid Tartrate 4, Boric Acid 1; Mex. (Tartrato borico-potasico), Potassium Bicarbonate 10, Tartaric Acid 10, Boric Acid 5; Port., with Boric Acid and Potassium Acid Tartrate, but no quantities given.

**Medicinal Properties.**—Same as Cream of Tartar.

## PRUNI VIRGINIANÆ CORTEX.

### VIRGINIAN PRUNE BARK.

The Bark of *Prunus serotina*; it is believed to be stronger when collected in the autumn than when collected in the spring.

In addition to astringent Tannins, this bark contains Amygdalin and Emulsin, which on treatment with Water develop Hydrocyanic Acid (in a manner similar to the Cherry-Laurel), to which the sedative effects of its preparations are probably due.

**Medicinal Properties.**—Sedative. Highly useful in full doses for resultless hacking cough in phthisis and chronic bronchitis. The Syrup is also useful as a flavouring vehicle for nauseous medicines.

**Official Preparations.**—Syrupus Pruni Virginianæ, and Tinctura Pruni Virginianæ.

**Official in U.S.** U.S. has also an Infusum and Fluid Extract.

### SYRUPUS PRUNI VIRGINIANÆ. SYRUP OF VIRGINIAN PRUNE.

Percolate 3 of Virginian Prune Bark, in No. 20 powder, with Distilled Water to yield 9; Refined Sugar, in coarse powder, 15; Glycerin, 1½. Dissolve 15 of Refined Sugar in the liquid, by agitation, without heat; add 1½ of Glycerin; strain; pour Distilled Water over the strainer to make up to 20.

**Dose.**—½ to 1 fl. drm. = 1·8 to 3·6 c.c.

**Official in U.S.**, Wild Cherry 15, Sugar 70, Glycerin 15, Water to make 100.

### TINCTURA PRUNI VIRGINIANÆ. TINCTURE OF VIRGINIAN PRUNE.

Macerate 4 of Virginian Prune Bark, in No. 20 powder, with 7½ of Distilled Water for twenty-four hours; add 12½ of Alcohol (90 p.c.) and continue the maceration for seven days,

**Dose.**—½ to 1 fl. dr. = 1·8 to 3·6 c.c.

**PRUNUM.****PRUNES.**

The dried ripe Fruits of *Prunus domestica*.

Imported from the South of France.

**Medicinal Properties.**—Nutritious and demulcent. Rarely prescribed, though often used in domestic medicine as a laxative.

**Official Preparation.**—Contained in *Confectio Sennæ*.

**Official in Belg., Fr.,** Prunier Commun; Mex., Ciruelo de Espana; Port., Ameixas Passadas; Span., Ciruelo; U.S.

**PTEROCARPI LIGNUM.****RED SANDERS-WOOD.**

*B.P. Syn.*—RED SANDAL-WOOD.

The Heart-wood of *Pterocarpus santalinus*.

From Madras and Ceylon. Used solely as a colouring agent.

**Official Preparation.**—Used in the preparation of *Tinctura Lavandulae Composita*.

**Official in Austr., Belg., Dan., Dutch, Fr., Jap., Port., Span., Swed. and U.S.**

**Not Official.****PULSATILLA.**

The Herbs of *Anemone Pulsatilla* and *Anemone pratensis* collected soon after flowering.

It should be carefully preserved, and not kept longer than one year.

It contains an unstable body, **Anemone-camphor**, which occurs in trimetric prisms. It splits up into Anemonin and Anemonic Acid.

**Medicinal Properties.**—Has been used in dysmenorrhœa with various results.

Has been recommended in orchitis and epididymitis, but in experiments at the Lock Hospital it was found to be valueless.—*L.* '89, ii. 216.

**Official in Fr., Span. and U.S.**

**TINCTURA PULSATILLÆ.**—Carefully dried Herb, 1; Alcohol (60 p.c.), to percolate 10.

Unless the Herb is very finely powdered, it answers better to soak it in warm Water for a day, and then add Alcohol to bring the mixture to the strength of Alcohol (60 p.c.).

**Dose.**—5 to 30 minims = 0·3 to 1·8 c.c.

A tincture of this strength is now included in *B.P.C.* with a dose of 1 to 5 minims or more.

## PYRETHRI RADIX.

PYRETHRUM ROOT.

*N.O.Syn.*—PELLITORY Root.

The dried Root of *Anacyclus Pyrethrum*.

Collected chiefly in Algeria.

**Medicinal Properties.**—It is powerfully stimulant to the salivary glands, causing a copious flow of saliva, and, on that account, is used as a masticatory in dryness of the mouth and throat. The Tincture is used on cotton-wool for relieving toothache, or when diluted, as a mouth-wash.

**Official Preparation.**—*Tinctura Pyrethri.*

**Not Official.**—*Trochisci Pyrethri.*

**Official in Austr., Belg., Fr. (Pyrethre Officinal), Mex. (Peritre de Africa), Port. (Pyrethro), Span. (Pelitre), and U.S.; Dan. uses the Root of *Anacyclus officinarum*.**

**TINCTURA PYRETHRI. TINCTURE OF PYRETHRUM.**

Pyrethrum Root, 4; Alcohol (70 p.c.), *q.s.* to yield 20.

(1 in 5)

Now made with Alcohol (70 p.c.) in place of Rectified Spirit.

**Official in Belg., Dan., Fr. and Span., 1 and 5 (by weight); Mex. and U.S., 1 in 5.**

**Not Official.**

**TROCHISCI PYRETHRI.**—Contain 1 grain in each.—*Throat.*

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**Not Official.**

## PYRETHRI FLORES.

*Syn.*—INSECT POWDER.

The powder of the Flower-heads, obtained in the Caucasus, from *Pyrethrum roseum* and *P. carneum*, and in Dalmatia from *Pyrethrum cinerariæfolium*.

The active principle is an Ether-soluble Resin, not a volatile Oil.

**Official in Fr. Mex. (Peritre del Caucaso).**

Keeps away troublesome insects.

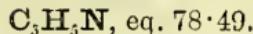
**TINCTURA PYRETHRI FLORUM.**—The Flower-heads, in powder, 1; Alcohol (60 p.c.), to percolate 4.

Diluted 1 to 10 of Water forms a lotion to keep away insects.

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Not Official.

### PYRIDIN.



A colourless, volatile liquid, with a powerful and a peculiar odour. Sp.gr. 0·980. Its aqueous solution has a strong alkaline reaction to Litmus. It yields a crystalline deliquescent salt with Hydrochloric Acid.

It is a base obtained from the products of the destructive distillation of bones.

Commercially it always contains Picoline. In its cruder forms it is employed in Germany for 'denaturating' Alcohol, corresponding to 'Methylating' in this country.

**Solubility.**—It is miscible with Water, Alcohol (90 p.c.), Ether, and the fixed Oils.

**Medicinal Properties.**—Useful in the treatment of asthma; 4 or 5 grammes (62 to 77 grains) are allowed to evaporate from a flat dish in a small room, the patient being exposed to its vapour for about half-an-hour three times a day. Is most beneficial in cardiac dyspnoea, emphysema and angina pectoris.

If the vapour be inhaled in quantity, it produces headache.

Like Nicotine, it is a good insecticide.

### PYROXYLINUM.

#### PYROXYLIN.

*N.O.Syn.*—GOSSYPIUM FULMINANS; FULMI-COTON; LANA COLLODII; COLLOXYLINUM.

A white, fibrous substance, having very much the appearance of ordinary cotton, but rapidly burning away with a flash when ignited. It requires to be kept in small quantities in a cool dry place, and away from lights.

Pyroxylin is Dinitrocellulose  $\text{C}_6\text{H}_8(\text{NO}_2)_2\text{O}_5$ . Gun Cotton is Trinitrocellulose  $\text{C}_6\text{H}_7(\text{NO}_2)_3\text{O}_5$  and is not soluble in any mixture of Alcohol and Ether.

It sometimes decomposes on keeping, with disengagement of Nitrous fumes, and becomes insoluble.

The safest and best plan for its preservation is to moisten the dry material with an equal weight of Methylated Spirit, and preserve in a well-stoppered jar; when required for use it is quickly and easily dried.—*P.J.* '96, ii. 110; *C.D.* '96, ii. 207.

**Solubility.**—Readily soluble in a mixture of equal volumes of Ether and Alcohol (90 p.c.); also in Acetone.

Acetone might be used as a cheap and efficient solvent for making Collodion; it forms a 10 p.c. solution very easily.

Cotton, 1; Sulphuric Acid, 5; Nitric Acid, 5; Distilled

Water, a sufficient quantity. Mix the Acids in a porcelain mortar, immerse the Cotton in the mixture, and after it is thoroughly wetted by the Acids stir it for three minutes with a glass rod; wash the product with Distilled Water until free from acid; drain on filtering paper, and dry the Pyroxylin on a water-bath.

This is the B.P. formula, but the proportions vary considerably in the various Pharmacopœias.

**Official in Belg., Dutch, Fr., Ger., Ital., Mex., Port., Russ., Span., Swed., Swiss and U.S.**

**Official Preparations.**—Used in the preparation of Collodium, and Collodium Vesicans. Of **Collodium**, Collodium Flexile.

#### **COLLODIOUM. COLLODION.**

Dissolve 1 of Pyroxylin in a mixture of Ether 36, and Alcohol (90 p.c.) 12; after a few days decant.

If the Pyroxylin be first soaked in the Alcohol, it quickly dissolves when Ether is added.—*P.J.* '02, i. 138; *C.D.* '02, i. 269.

Mixes with Ether; but when mixed with Water or Alcohol (90 p.c.) the Pyroxylin is thrown out.

**Official Preparations.**—Collodium Flexile; Collodium Vesicans. *See* Cantharis, p. 170.

**Not Official.**—Styptic Colloid, Hæmostatic Collodion, Anodyne Colloid, Celloidin, and Photoxylin.

**Official** in all the Foreign Pharmacopœias; Belg. and Port. contain Castor Oil.

#### **COLLODIOUM FLEXILE. FLEXIBLE COLLODION. N.O.**

*Syn.*—COLLODIOUM ELACTICUM.

Collodion, 12 fl. oz.; Canada Turpentine,  $\frac{1}{2}$  oz. (by weight); Castor Oil,  $\frac{1}{4}$  oz. (by weight).

**Medicinal Properties.**—Chiefly used for coating with a protective film, fresh wounds, leech-bites, and fissured nipple; it has been recommended as an application to erysipelatous surfaces and to burns, and to prevent the pitting of smallpox.

A large number of substances can be dissolved in Collodion to form medicated Collodions. *See* Acidum Salicylicum, Belladonna, Cantharis, Crotonis Oleum, Iodum, Iodoformum.

It does not contract in drying.

**Official** in all the Foreign Pharmacopœias, proportions varying.

#### **Not Official.**

**COLLODIOUM STYPTICUM (B.P.C.).**—Dissolve 44 grains of Benzoin in 1 fl. oz. of Absolute Alcohol; filter, and in the filtrate dissolve 1 oz. of Tannic Acid; add Ether (sp. gr. 0·720), 4 fl. oz.; Pyroxylin, 44 grains; allow to stand three days, and decant.

An adaptation of Dr. Richardson's Styptic Colloid.

**HÆMOSTATIC COLLODION** (DR. PAVESI'S).—Collodion, 100; Carbolic Acid, 10; Tannic Acid, 5; Benzoic Acid, 5; dissolve. Is applied by means of a camel-hair pencil, or by soaking strips of linen in it.

**COLLODUM ANODYNUM** (Anodyne Collodion).—Aconitine, 1 grain; Veratrine, 6 grains; Æther Methylatus, 1 fl. oz.; Flexile Collodion, 1 fl. oz.

**CELOIDIN**.—A concentrated Collodion occurring in light, yellowish-brown, brittle strips. Is readily soluble in a mixture of Absolute Alcohol and Ether, and the solution is used for embedding histological specimens previous to cutting sections.

A solution of Pyroxylin in Acetone is known under the name **Filmogen**.

**PHOTOXYLIN**.—A nitrated wood pulp prepared in St. Petersburg. When made into Collodion it is stated to give a tougher film than Pyroxylin on evaporation.—*L.* '87, i. 1253; *B.M.J.* '88, i. 555.

## QUASSIÆ Lignum.

### QUASSIA WOOD.

The wood of the Trunk and Branches of *Picraea excelsa*.

Imported from Jamaica.

It contains a bitter principle, **Quassine**, sparingly soluble in Water.

**Medicinal Properties**.—Possesses in a high degree the properties of the simple bitters, without astringency. Particularly adapted as a tonic in dyspepsia and in the debility which succeeds acute disease; containing no Tannin, it is a compatible vehicle for Iron preparations. The infusion is also used as an anthelmintic enema in threadworm.

A few chips of Quassia or a weak infusion used in the morning bath is a protection against the annoying insects found in our cornfields.—*L.* '84, ii. 306. A strong infusion destroys fleas.—*L.* '95, i. 1018.

**Official Preparations**.—Infusum Quassiæ, Liquor Quassiæ Concentratus, Tinctura Quassiæ.

**Official in U.S.**, same as Brit.; Austr., Belg., Dan., Norw., Span. and Swed. use *Quassia amara*; Dutch, Fr., Ger., Ital., Jap., Mex. (Cuasia), Port., Russ. and Swiss use both.

### INFUSUM QUASSIÆ. INFUSION OF QUASSIA.

Quassia Wood, finely rasped, 88 grains; Distilled Water, cold, 20 fl. oz. Macerate fifteen minutes, and strain.

(about 1 in 100)

**Dose**.— $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 c.c.

Official in Fr. (Quassia Amara), 1 in 200; Ital., 1 in 20; Span. (Tinct. Acuosa de Quassia Amarga), 1 in 100.

A solid extract is Official in the following: Fr. (Quassia Amara), Belg., Mex., Port. and Span. use cold Water; Austr., Dan., Dutch and Swiss use boiling Water; U.S. with cold Water; Dan., Mex. and U.S. have also a fluid extract.

**LIQUOR QUASSIÆ CONCENTRATUS.** CONCENTRATED SOLUTION OF QUASSIA.

2 of Quassia Wood, in No. 40 powder, percolated with Alcohol (20 p.c.), to produce 20. (1 in 10)

Dose.— $\frac{1}{2}$  to 1 fl. drm. = 1·8 to 3·6 c.c.

**TINCTURA QUASSIÆ.** TINCTURE OF QUASSIA.

1 of Quassia Wood, rasped, macerated with 10 of Alcohol (45 p.c.).

Now 1 in 10 instead of 1 in 27.

Dose.— $\frac{1}{2}$  to 1 fl. drm. = 1·8 to 3·6 c.c.

Official in Belg., Dutch, Fr. and Jap., 1 and 5 (by weight); Mex., 1 in 5; U.S., 1 in 10.

Not Official.

**QUEBRACHO.**

The Bark of *Aspidosperma Quebracho*, obtained from the Argentine Republic and Brazil (*Quebracho blanco*).

**Medicinal Properties.**—It is said to possess tonic, febrifuge, and anti-asthmatic properties. Was used rather extensively at one time as a remedy for asthma, cardiac dyspnoea, and spasmodic croup, but is now seldom prescribed.

Official in Austr., Dutch Supp., Mex. and Swiss.

Tinctura Quebracho, 1 in 5 of Alcohol (60 p.c.); dose,  $\frac{1}{2}$  to 1 fl. drm. = 1·8 to 3·6 c.c.

Official in Dutch Supp., Mex. and Swiss.

**Fluid Extract** (1 in 1) is Official in Austr. Add.

The following alkaloids and salts can be obtained: Aspidospermine Cryst. and Sulphate (Fraude); Aspidosamine and Hydrochloride (Hesse); Quebrachine Cryst. and Hydrochloride (Hesse), dose,  $\frac{3}{4}$  to  $1\frac{1}{2}$  grains; Quebrachamine and Sulphate (Hesse); Hypoquebrachine and Hydrochloride (Hesse).

Quebrachine is more active and more poisonous than Aspidospermine; it has greater antithermic properties.—*L.* '86, i. 804.

Not Official.

### QUERCUS CORTEX.

#### OAK BARK.

The dried Bark of the small Branches and young Stems of *Quercus Robur*, collected in spring from trees growing in Britain.

**Medicinal Properties.**—An astringent, whether administered internally or applied externally. May be used either generally or topically, in all cases requiring astringents, such as relaxed throat or tenderness of the gums; in leucorrhœa, gonorrhœa, prolapsus ani, etc.

**Dose.**—Of the powder, 30 to 120 grains = 2 to 8 grammes. Of a Decoction (1 to 16), 1 to 2 fl. oz. = 28·4 to 56·8 c.c.

**Official** in all the Foreign Pharmacopœias except Ital., Jap. and Swed.; Fr. (Chêne), Port. (Corvalho), Mex. and Span. (Encina), U.S. (*Quercus alba*).

### QUILLAIÆ CORTEX.

#### QUILLAIA BARK.

B.P. *Syn.*—PANAMA BARK. N.O. *Syn.*—SOAP BARK.

The inner part of the Bark of *Quillaja saponaria*.

Imported from Chili and Peru.

**Medicinal Properties.**—Has been strongly recommended as an expectorant; but its use requires caution, for it is a powerful irritant.

The powder is excessively irritating to the air passages.

It has been found to possess properties allied to Senega, but it contains the two poisonous glucosides 'Quillaic Acid' and 'Sapotoxin' in much greater quantity than they exist in Senega.

**Prescribing Notes.**—*The Tincture is used to emulsify oils and fats; it requires from 1 to 3 of Tincture for 2 of Oil, depending on its character. Saponin is used for the same purpose.*

**Not Official.**—Saponin (Quillaic Acid).

**Official Preparation.**—Tinctura Quillaiæ. Used in the preparation of Liquor Picis Carbonis.

**Official** in Fr. (Bois de Panama), Ger., Mex., and U.S.

### TINCTURA QUILLAIÆ. TINCTURE OF QUILLAIA.

1 of Quillaia Bark, in No. 20 powder, percolated with Alcohol (60 p.c.), to yield 20. (1 in 20)

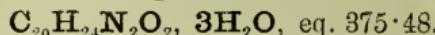
**Dose.**—½ to 1 fl. dram. = 1·8 to 3·6 c.c.

**Official** in Fr. (Teinture de Panama), 1 in 5 (Alcohol 80 p.c.); Mex., 1 in 5; U.S., 1 in 5 (Diluted Alcohol).

## Not Official.

**SAPONIN** (Quillain, Quillaic Acid).—A white, amorphous powder, soluble in Water and in Alcohol (90 p.c.); insoluble in Ether and in Chloroform.

## Not Official.

**QUININA.**

This alkaloid is precipitated from solutions of its salts as a Trihydrate, containing 14 p.c. of Water. It is met with as a white, soft, granular powder, slightly damp from adherent moisture, easily soluble in Ether or dilute mineral acids, and melting to a gummy-looking mass at about 140° F. (60° C.).

When separated from its solutions by shaking out with Ether or Chloroform and evaporating to dryness, it still retains a little Water, dried off with difficulty in a water-bath; for determination purposes it should be heated to 250° F. (120° C.).

**Solubility.**—Very sparingly in Water; 1 in 1 of Alcohol (90 p.c.); 1 in 3 of Chloroform; 1 in 4 of Ether.

**Official in Austr., Dutch Supp., Fr., Hung., Mex., Port., Span., Swed., Swiss and U.S.**

[The Official Salts of Quinine (**Hydrochlorides** and **Sulphate**), are given under separate headings.

**Injectio Quininæ Hypodermica.**—Quinine Hydrate, 76 grains; Lactic Acid, 27 minims, or a sufficiency; Distilled Water, a sufficiency; rub the Quinine with 6 fl. drm. of the Water, and add the Lactic Acid so as to dissolve the Quinine, and form a solution neutral or only faintly acid to Litmus paper, and make the measure up to 1 fl. oz. with Distilled Water.

More recently the Acid Hydrobromide has been used for this purpose, see p. 526.

**QUININÆ ARSENAS.**—The composition of this salt being so variable, according to the method of preparation, the compound ( $\text{C}_{20}\text{H}_{24}\text{N}_2\text{O}_2 \cdot \text{AsH}_3\text{O}_4 \cdot \text{H}_2\text{O}$ ), containing 66 p.c. of Quinine and 29 p.c. of Arsenic Acid, has been recommended as the most stable and otherwise suitable.—*P.J.* (3) xx. 162.

**Dose.**—One-tenth of a grain = 0.0065 grammie.

**QUININÆ CARBOLAS.**—The crystalline salt contains 77 p.c. of Anhydrous Quinine. For extemporaneous preparations, the alkaloid may be used, and the best proportions are: Quinine, 4; Carbolic Acid, 1; melt, and cool.

**Dose.**—2 grains = 0.13 grammie for diarrhoea.

**Quininæ Sulphocarbolas.**—A yellowish-white powder, prepared by the interaction of Quinine Sulphate and Barium Para-phenolsulphonate. Dose, 1 to 5 grains = 0.06 to 0.32 grammie.

**QUININÆ CITRAS.**—Crystallises in delicate needles.

Various formulas are given for this salt,  $\text{Q}\bar{\text{C}}\text{i}$ ;  $\text{Q}_2\bar{\text{C}}\text{i}$ ;  $\text{Q}_2\bar{\text{C}}\text{i}.7\text{H}_2\text{O}$ ;

but the commercial salt corresponds more closely with  $(C_{20}H_{24}N_2O_2)_2H_3C_6H_5O_2 \cdot 3H_2O$ , eq. 887·94, containing 72·5 p.c. of Quinine.

**Solubility.**—1 in 1200 of Water; slightly in Chloroform.

**QUININÆ ETHYLCARBONAS** (Euquinine, Euchinine).—Light, odourless, almost tasteless, silky, crystalline needles, sparingly soluble in Water; soluble in Alcohol, in Ether and in Chloroform. Produced by the action of Ethyl-chlor-carbonate on Quinine.

Antipyretic and analgesic. It has been recommended as a substitute for Quinine, and has been found useful in the hectic fever of tuberculosis, in whooping-cough, influenza, and malaria.—*B.M.J.E.* '96, ii. 104; '99, i. 100; '01, ii. 16; *B.M.J.* '97, ii. 1734; *L.* '97, ii. 728.

**Dose.**—5 to 10 grains = 0·32 to 0·65 grammes.

**Official in Dutch Supp.**

Under the name of **Aristochin**, a Di-Quinine Carbonic Ester, in the form of an odourless, almost tasteless powder, has also been introduced. As an analgesic  $\frac{1}{4}$  gramme =  $3\frac{3}{4}$  grains, or more generally  $\frac{1}{2}$  gramme =  $7\frac{1}{2}$  grains, given three times, 3, 2 and 1 hour before the pain is expected to begin. In doses of  $\frac{1}{2}$  gramme =  $7\frac{1}{2}$  grains as an antipyretic in the treatment of malaria.—*B.M.J.E.* '04, i. 55.

**QUININÆ ET FERRI CHLORIDUM.**—In brown scales or in a dark brown powder, very soluble in Water. Used as a haemostatic.

**Dose.**—5 to 15 grains = 0·32 to 1 grammes.

**QUININÆ FLUORIDUM.**—A white, or whitish, amorphous powder.

**Dose.**—1 to 2 grains = 0·06 to 0·13 grammes.

**QUININÆ GLYCEROPHOSPHAS.**—There are two Quinine Glycerophosphates, one basic and one neutral. The basic salt is the one in general use. In slender, white, crystalline needles, insoluble in Water, 1 in 200 of Alcohol (90 p.c.). It should yield no free Glycerin when shaken with Absolute Alcohol, and subsequent evaporation of the solvent; should give no reaction for free Phosphoric Acid.

It combines the medicinal properties of Quinine and of Glycerophosphoric Acid, and has been found useful chiefly in neuralgia and in febrile conditions.

Recommended in certain malarial conditions, and in convalescence after fever.

**Dose.**—2 to 8 grains = 0·13 to 0·52 grammes.

**QUININÆ HYDRIODIDUM.**—The neutral salt has about the same solubility in Water as the Sulphate, and dissolves freely in Alcohol and Ether. It is generally found as a yellowish, amorphous powder.  $C_{20}H_{24}N_2O_2 \cdot HI$ , eq. 448·74.

**QUININÆ HYDRIODIDUM ACIDUM** ( $C_{20}H_{24}N_2O_2 \cdot 2HI \cdot 5H_2O$ , eq. 665·04).—Crystallises in large laminæ of a fine yellow colour and is soluble 1 in 20 of Water.

Both salts have been given in cases of chroic rheumatism and in tuberculosis.

**Dose.**—1 to 5 grains = 0·06 to 0·32 gramme.

**QUININÆ HYDROBROMIDUM.**—Colourless, silky crystals, neutral or slightly alkaline.

It is given (*P.J.* (3) v. 303) with  $H_2O$ , and soluble 1 in 5. Codex with  $H_2O$ , soluble 1 in 60. Our stock (May 1893) corresponded with  $C_{20}H_{24}N_2O_2 \cdot HBr \cdot H_2O$ , containing 76·5 p.c. of Quinine, and soluble about 1 in 55 of Water; after drying at 125° C., its original moisture was again absorbed rapidly from the atmosphere. U.S. (1882) gave the formula with  $2H_2O$ , and solubility 1 in 16 of Water; U.S. (1893) gives it with  $H_2O$ , and soluble 1 in 54 of Water.

**Dose.**—1 to 5 grains = 0·06 to 0·32 gramme.

**Official in** Dutch, Fr., Mex., Port., Russ., Span., Swed., Swiss and U.S.

**QUININÆ HYDROBROMIDUM ACIDUM** ( $C_{20}H_{24}N_2O_2 \cdot 2HBr \cdot 3H_2O$ , eq. 536·18).—Colourless crystals, containing 60 p.c. of Quinine.

**Solubility.**—1 in 6 of Water.

3 grains dissolved in 20 minims warm Distilled Water injected into the carefully asepticised upper arm, in the treatment of chronic malarial fever. Six injections on alternate days are usually required in a serious case.—*B.M.J.* '99, ii. 85; '02, i. 201, 439; '03, i. 848; *Y.B.P.* '02, 203.

**Dose.**—1 to 5 grains = 0·06 to 0·32 gramme. Best administered hypodermically.

**Official in** Fr., Bromhydrate de Quinine Neutre.

**QUININÆ HYDROCHLORO-SULPHAS.**—Glistening, white, silky, crystalline needles, or as a white, or yellowish-white, amorphous powder. Soluble 1 in 2 of Water; 1 in 7 of Alcohol (90 p.c.). On account of its greater solubility in Water, it has been recommended for hypodermic use.

**Dose.**—1 to 5 grains = 0·06 to 0·32 gramme.

**QUININÆ HYPOPHOSPHIS** ( $C_{20}H_{24}N_2O_2 \cdot H_2PO_2$ , eq. 386·40).—Generally supplied as an amorphous powder, but it can be obtained in light, colourless, prismatic crystals.

**Solubility.**—1 in 250 of Water; 1 in 40 of Alcohol (90 p.c.).

Has been used in pulmonary tuberculosis.

**Dose.**—1 to 5 grains = 0·06 to 0·32 gramme.

**QUININÆ IODO-HYDRIODIDUM.**—A reddish-brown, amorphous powder, insoluble in Water and in Alcohol; it is obtained on adding Iodo-Potassium Iodide solution to a solution of a Quinine salt. Has been employed in syphilitic diseases.

**Dose.**—1 to 4 grains = 0·06 to 0·26 gramme.

**QUININÆ LACTAS** ( $C_{20}H_{24}N_2O_2 \cdot C_3H_6O_3$ , eq. 411·21).—Colourless prismatic needles, or a white crystalline powder; soluble about 1 in 6 of Water, but there is much doubt about its solubility.

A solution, 1 in 4, can be made by neutralising Quinine with Lactic Acid, p. 524.

Chiefly used as a 10 p.c. solution for hypodermic injection.

**Official in Fr. Codex.**

**QUININÆ PHOSPHAS.**—In light, white, acicular crystals. It is stated (*P.J.* (3) xxiii. 234) that the English-made salt has the formula  $3C_{20}H_{24}N_2O_2 \cdot 2H_3PO_4 \cdot 6H_2O$ , and the German salt  $2C_{20}H_{24}N_2O_2H_3PO_4 \cdot 4H_2O$ ; the former containing 76 p.c. and the latter 79 p.c. of Quinine.

**Solubility.**—1 in 420 of Water; 1 in 110 of Alcohol (90 p.c.).

**Dose.**—1 to 5 grains = 0·06 to 0·32 grammes.

**QUININÆ SALICYLAS** ( $C_{20}H_{24}N_2O_2 \cdot C_7H_6O_3$ , eq. 458·85).—White, crystalline, silky needles, prepared by the interaction of Quinine Sulphate with Sodium Salicylate. It is practically anhydrous, and contains 70 p.c. of Quinine.

**Solubility.**—1 in 630 of Water; 1 in 24 Alcohol (90 p.c.); 1 in 25 of Chloroform.

**Dose.**—1 to 5 grains = 0·06 to 0·32 grammes.

Given in capsules, cachets, or pills.

**Official in Dutch Supp., Fr., Mex., Russ., Span. and Swiss.**

**Saloquinine** (Quinine Ester of Salicylic Acid).—Colourless crystals, or a white amorphous powder; insoluble in Water, soluble in Alcohol (90 p.c.). Antipyretic, antiseptic, and analgesic. Has been recommended in typhoid fever and in neuralgia. Is also stated to possess antirheumatic properties.—*B.M.J.* '02, i. 782; *Y.B.P.* '02, 204.

**Dose.**—15 to 30 grains = 1 to 2 grammes.

**Rheumatine** (Salicylquinine Salicylate).—Colourless crystalline needles, or as a white amorphous powder; soluble about 1 in 2000 of Water; 1 in 15 of Alcohol (90 p.c.). Antirheumatic. Has been found useful in acute articular rheumatism.—*B.M.J.* '02, i. 782; *Y.B.P.* '02, 204; *P.J.* '01, ii. 645; *C.D.* '02, i. 820.

**Dose.**—15 to 30 grains = 1 to 2 grammes.

**QUININÆ SULPHAS ACIDUS** ( $C_{20}H_{24}N_2O_2 \cdot H_2SO_4 \cdot 7H_2O$ , eq. 544·34).—Translucent, colourless, or white, rhombic crystals, which effloresce on exposure to air. It was originally called the **Neutral Quinine Sulphate**.

It should be kept in well-closed bottles and in a dark place.

**Solubility.**—1 in 10 of Water; 1 in 45 of Alcohol (90 p.c.).

**Dose.**—2 to 12 grains = 0·13 to 0·78 grammes.

A **solution** of 1 or 2 grains to the fluid ounce of Distilled Water applied to the eyes and nostrils for hay fever.

2 grains twice daily as a prophylactic of influenza.—*B.M.J.* '02, i. 940.

5 grains injected into the subcutaneous tissue of the angle of the scapula repeated every three days in malaria. Strong acids, especially Sulphuric, used to dissolve the Quinine Salt may produce a local necrosis without agency of micro-organisms.—*B.M.J.* '02, i. 1113.

50 minimis of a 1 in 5 solution successfully injected into each broad ligament in a case of prolapsus uteri.—*B.M.J.* '03, i. 366.

**Official in Austr., Belg., Dutch Supp., Fr., Hung., Ital., Mex., Swiss and U.S.**

**QUININÆ TANNAS.**—A yellowish-white, amorphous powder; sparingly soluble in Water, 1 in 3 of Alcohol (90 p.c.). It should be preserved from the light.

At one time recommended because of its being tasteless.

Large doses recommended in whooping-cough,  $1\frac{1}{2}$  grains for each year of age.—*L.M.R.* '81, 177.

**Dose.**—1 to 10 grains = 0·065 to 0·65 grammes.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Mex., Norw., Port., Russ., Span. and Swiss.** Dutch Supp. includes Tannas Chinini Insipidus.

**QUININÆ TARTRAS** ( $(C_{20}H_{24}N_2O_2)_2$ .  $C_4H_6O_6 \cdot H_2O$ , eq. 810·48).—A white, crystalline powder.

**Solubility.**—Very sparingly in Water (about 1 in 1000).

Quinine Sulphate, 80 grains; Tartaric Acid, 40 grains; Distilled Water, to measure 4 fl. drm., has been used in India for hypodermic injection.

**QUININÆ VALERIANAS** ( $C_{20}H_{24}N_2O_2$ .  $C_5H_{10}O_2$ , eq. 423·15).—White, lustrous, pearly crystals, having an odour of Valerianic Acid. Can be prepared by decomposing Quinine Hydrochloride with Sodium Valerianate.

**Solubility.**—1 in 120 of cold Water; 1 in 2 of Alcohol (90 p.c.); 1 in 14 of Ether.

**Dose.**—1 to 3 grains = 0·06 to 0·2 grammes.

**Official in Belg., Dutch Supp., Fr., Ital., Mex., Port., Span., Swed. and U.S.**

**Quinine Camphorate**, a white powder insoluble in Water, soluble in Alcohol (90 p.c.), dose, 1 to 10 grains = 0·06 to 0·65 grammes; **Quinine Bihydrochloro-carbamide**, prismatic crystals soluble in Water, dose, 5 to 15 grains = 0·32 to 1 gramme, chiefly used hypodermically; **Quinine Saccharinate** (Basic), crystalline needles insoluble in Water; **Quinine Sulphocarbolate**, a yellowish-white powder, soluble in Alcohol, dose, 1 to 5 grains = 0·06 to 0·32 gramme; **Quinine Sulphocresotate**, yellow scales soluble in Water, dose, 1 to 5 grains = 0·06 to 0·32 gramme; and **Quinine Vanadate** are salts of Quinine which have received some attention in medical literature.

**SYRUPUS QUININÆ DIKINATIS.**—Introduced by Dr. Donovan of Dublin.

1 fl. drm. contains 2 grains of Quinine Dikinate.

**Dose.**— $\frac{1}{2}$  to 1 fl. drm. = 1·8 to 3·6 c.c.

**WARBURG'S TINCTURE FOR MALARIAL FEVER.**—Contains Quinine. The formula for this is given in the *M.T.* '75, ii. 540, with some interesting cases by Professor Maclean, C.B.: Aloes Socotrinæ 4, Rad. Rhei 4, Sem. Angelicæ 4, Conf. Damocratis 4, Rad. Helenii 2, Croci Sativi 2, Sem. Fœniculi 2, Cretæ Præparatæ 2, Rad. Gentianæ 1, Rad. Zedoariæ 1, Pip. Cubebæ 1, Myrrh Elect. 1, Camphoræ 1, Bolet. Laricis 1. Digest with 500 of Proof

Spirit on a water-bath for twelve hours, express, and add Quininæ Sulphatis 10. Continue heating on a water-bath till all the Quinine Sulphate is dissolved; filter when cold.

Warburg's Tincture is without its equal in persistent and protracted agues.—*T.G.* '94, 842.

A somewhat similar preparation is now included in *B.P.C.* under the title **Tinctura Antiperiodica**.

**QUINETUM.**—The mixed Alkaloids from the E. I. Red Cinchona Bark. The Sulphate resembles Quinine Sulphate.

**Solubility.**—Sparingly in Water; 1 in 90 of Alcohol (90 p.c.).

**Dose.**—Of the Sulphate 1 to 10 grains = 0·06 to 0·65 grammes.

**Official in Dutch Supp.**

**QUINIDINÆ SULPHAS** ( $(C_{20}H_{24}N_2O_2)_2 \cdot H_2SO_4 \cdot 2H_2O$ , eq. 776·78). White, silky crystals. It should be kept in well-stoppered bottles.

**Solubility.**—1 in 200 of Water; 1 in 24 of Alcohol (90 p.c.); about 1 in 100 of Glycerin.

**Dose.**—10 to 20 grains = 0·65 to 1·3 grammes.

**Official in Dutch Supp., Fr. and U.S.**

**QUINOIDIN.** *Syn.* CHINOIDIN.—A mixture of Alkaloids, mostly amorphous, obtained as a by-product in the manufacture of the crystallisable alkaloids from Cinchona. A brownish-black mass with alkaline reaction. On ignition should not leave more than 0·7 p.c. of ash.

**Official in Dutch Supp. and Jap.; Dutch Supp. contains also 1 in 10 Tincture.**

**QUINOLINE** (Chinoline  $C_9H_7N$ , eq. 118·13).—It is formed by the distillation of Quinine or Ciuchonine with aqueous Potassium Hydroxide, or synthetically from Aniline and Nitrobenzene. It is a colourless, mobile liquid, having a faint aromatic odour and a peculiar penetrating taste, sparingly soluble in Water, miscible with Alcohol, Ether and Carbon Bisulphide. It should be preserved in well-stoppered bottles of an actinic tint.

**Dose.**—5 to 15 grains = 0·32 to 1 gramme.

**Official in Dutch Supp., as is also Chinoline Tartrate.**

**LORETIN** (Meta-iod-orthoxychinolin-anasulphonic Acid).—A pale yellowish powder, odourless and non-poisonous. Introduced as a substitute for Iodoform. Used as a dusting powder, also in the form of Ointment.—*B.M.J.E.* '93, ii. 91; *M.A.* '95, 34; *L.* '94, ii. 31; '95, ii. 183; *M.P.* '94, ii. 25.

**CHINOSOL** (Quinosol. Potassium Oxychinoline Sulphonate).—A bright lemon-yellow powder with a faint odour, soluble in Water.

A powerful antiseptic, disinfectant and deodorant. Action more marked as a lotion than as a powder. When used as a powder should be diluted. Solutions for disinfection of instruments should not be too concentrated. Drug possesses toxic properties. If used in too concentrated a form subcutaneously it will produce local irritation and swelling. Is not rapidly absorbed by the unbroken skin.—*B.M.J.* '98, i. 91.

In doses of 1 to 5 grains internally and as a local application it has given good results in leprosy.—*P.J.* '99, ii. 135.

5 grains three times a day after food in the treatment of over one hundred cases of pulmonary phthisis. In almost every case improvement in the patient's general condition followed.—*L.* '99, ii. 90, 181, 238.

1 to 2 p.c. solution has power of arresting haemorrhage.—*B.M.J.E.* '01, ii. 60.

**Official in Russ.**

**Crurin** (Quinoline Bismuth Sulphocyanide).—A yellowish-red powder, insoluble in Water and Alcohol. It has been recommended in the form of a  $\frac{1}{2}$  p.c. solution as an injection in gonorrhœa:—1 of Crurin rubbed up with Glycerin and Water, of each 5, and made up with Water to 200.—*B.M.J.E.* '02, i. 32; *C.D.* '02, i. 643; *P.J.* '00, i. 615; '00, ii. 486; '02, i. 442.

**Vioform** (Iodochloroxychinoline : Iodochloroxyquinoline).—An almost odourless, non-toxic powder, insoluble in Water. Antiseptic and germicide. Introduced as a substitute for Iodoform. It has been found useful in operations upon tubercular joints. Most conveniently used as an emulsion:—Vioform 50, Glycerin 200, Sterilised Water 200, Alcohol 100.—*B.M.J.E.* '03, i. 31; *P.J.* '00, ii. 470, 700; '02, i. 513.

**Diaphthol** (Quinaseptol) and **Diaphtherin** (Oxychinaseptol) have also been used as antiseptics.

## QUININÆ HYDROCHLORIDUM.

### QUININE HYDROCHLORIDE.

HYDROCHLORATE OF QUININE.—*B.P.* '85.

$C_{20}H_{24}N_2O_2HCl$ ,  $2H_2O$ , eq. 393·79.

White, odourless, silky, needle-shaped crystals, possessing a very bitter taste, and which have a tendency to lose water in warm air. It is Officially described as the Hydrochloride of an alkaloid obtained from the Bark of various species of *Cinchona* and *Remijia*.

**Solubility.**—1 in 37 of Water; 1 in 1 of boiling Water; 1 in 1 of Alcohol (90 p.c.). The anhydrous salt is very soluble in Chloroform.

**Medicinal Properties.**—Same as Quinine Sulphate.

The salt is preferred for the prevention of ague for the following reasons; (1) it is more readily soluble and very easily absorbed; (2) it is less irritating to the gastric mucous membrane; (3) it contains relatively a greater proportion of Quinine; (4) it is the chief soluble salt of Quinine, and is almost universally used in the malarial districts of Italy.—*B.M.J.E.* '03, ii. 12.

Topical use of in leucorrhœa, 2 to 3 grains as a pessary.—*L.* '99, i. 26, 192.

As a styptic and antiseptic agent. Recommended for parenchymatous haemorrhages.—*L.* '01, ii. 1541.

Inoperable cancer of the uterus successfully treated by endovenous injection of 4 to 8 grains.—*B.M.J.E.* '03, i. 26.

**Dose.**—1 to 10 grains = 0·06 to 0·65 grammes.

**Official Preparations.**—Tinctura Quininæ and Vinum Quininæ.

Official in all the Foreign Pharmacopœias except Belg.

#### TINCTURA QUININÆ. TINCTURE OF QUININE.

Quinine Hydrochloride, 175 grains; Tincture of Orange, 20 fl. oz. (about 1 grain in 55 minims)

**Dose.**—½ to 1 fl. dram. = 1·8 to 3·6 c.c.

#### VINUM QUININÆ. QUININE WINE.

Quinine Hydrochloride, 20 grains; Orange Wine, 20 fl. oz.

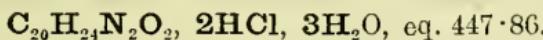
**Dose.**—½ to 1 fl. oz. = 14·2 to 28·4 c.c.

Now made with Quinine Hydrochloride instead of Sulphate.

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### QUININÆ HYDROCHLORIDUM ACIDUM.

#### ACID QUININE HYDROCHLORIDE.



Small, colourless, glistening crystals, or as a white, odourless, crystalline powder, possessing a very bitter taste. It is Officially described as the Acid Hydrochloride of an alkaloid obtained from the Bark of various species of *Cinchona* and *Remijia*.

**Solubility.**—2 in 1½ of Water and measures 3; 1 in 5 of Alcohol (90 p.c.); 1 in 7 of Chloroform. Insoluble in Ether.

**Medicinal Properties.**—Same as Quinine Sulphate and Hydrochloride. It is frequently employed by hypodermic injection; a saturated solution may be used, or a weaker one if desired.

Intramuscular injections in malaria.—*L.* '02, i. 1379.

5 to 10 grains twice a day for six weeks injected into the gluteal muscles in the treatment of ague.—*B.M.J.* '02, ii. 1767.

15 grains twice daily given on an empty stomach in the treatment of typhoid fever in the tropics.—*B.M.J.E.* '02, i. 80.

In doses of 2 to 3 grains hypodermically in the treatment of blackwater fever.—*B.M.J.* '02, i. 1334; *P.J.* '02, ii. 249.

1 to 2 grains injected into the subcutaneous tissue over the

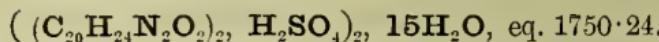
splenic area on three or four successive mornings in the treatment of malaria.—*B.M.J.* '03, i. 848.

**Dose.**—1 to 10 grains = 0·06 to 0·65 grammie.

Official in Dutch Supp., Fr. (Chlorhydrate neutre de Quinine), and Ital.

## QUININÆ SULPHAS.

QUININE SULPHATE.



Light, white, odourless, silky, needle-shaped crystals, possessing a very persistent bitter taste. It is Officially described as the Sulphate of an alkaloid obtained from the Bark of various species of *Cinchona* and *Remijia*.

The crystals effloresce on exposure to dry air, and yield a salt containing about 2 molecules of Water of crystallisation, these are in turn lost at a temperature of 100° C. (212° F.), but again reabsorbed on exposure of the dried salt to the air. Such a salt should be made Official.

**Solubility.**—About 1 in 800 of Water; 1 in 25 of boiling Water; 1 in 65 of Alcohol (90 p.c.); 1 in 40 of Glycerin.

60 grains require 60 minims of Diluted Sulphuric Acid, or 100 minims of Diluted Phosphoric Acid for solution in 2 fl. oz. of Distilled Water.

66 grains require 60 minims of Diluted Nitric Acid for solution in 2 fl. oz. of Water.

**Medicinal Properties.**—In small doses it acts as a most valuable tonic and bitter stomachic. In large doses it is an antiperiodic and antipyretic in intermittent fevers and all malarial conditions; in moderate doses it is an antipyretic in influenza and continued fevers, especially enteric (in which it also acts as an antiseptic), and it is analgesic in supra-orbital and other forms of neuralgia. Used as a spray (2 grains to 1 fl. oz.) in hay-fever; contra-indicated during advanced pregnancy; in large doses, or if taken frequently, produces temporary deafness.

It retards or arrests the alcoholic, lactic and butyric fermentations, but not the digestive action of Pepsin.

In whooping-cough, *M.A.* '95, 522; *T.G.* '94, 126; in cholera nostras.—*B.M.J.E.* '93, ii. 7.

As a prophylactic in African fevers.—*L.* '96, i. 219. As a prophylactic against influenza.—*B.M.J.E.* '95, ii. 92; *L.* '95, ii. 1381.

Combined with Ipecacuanha in dysentery.—*Pr.* liv. 478; *P.J.* (3) xxv. 1167.

10 grains with half its bulk of Tartaric Acid dissolved in 10 minimis of Water in the comatose and cerebral forms of remittent fever.—*B.M.J.* '99, ii. 1474.

Quinine and the malarial parasite. As the red blood corpuscle is necessary for the life of the parasite, Quinine, by driving the parasite out of its element, places it under conditions unfavourable and destructive to its development.—*B.M.J.E.* '99, ii. 68.

$\frac{1}{2}$  to 1 dram. doses of Ammoniated Tincture in treatment of dengue fever in Canton.—*L.* '03, i. 184.

Quinine rash caused by taking not over  $\frac{1}{2}$  grain.—*T.G.* '02, 8.

Applied as a dressing 1 dram. to 8 oz. in emulsion with Cod-liver Oil in tertiary and rheumatic ulcers of the leg.—*L.* '02, i. 443.

5 to 10 grains given, dissolved in the acid portion of an effervescing Potassium Citrate mixture, in certain forms of extensive dermatitis.—*B.M.J.* '03, i. 656; *L.* '03, i. 785.

Six cases of tetanus following the injection of strong solutions of Quinine.—*B.M.J.E.* '02, i. 63.

From the results of bacteriological tests Quinine salts seem to be more potent antiseptics than Carbolic Acid or Formaldehyde, and intermediate between these and corrosive sublimate.—*B.M.J.E.* '02, ii. 12.

**Dose.**—1 to 10 grains = 0·06 to 0·65 grammie.

**Prescribing Notes.**—Given in pills or cachets, also in aqueous solution assisted by the addition of Diluted Sulphuric or Diluted Hydrochloric Acid, 1 minim to each grain; it also dissolves readily in Tincture of Ferrie Chloride.

One of the most pleasant ways of giving Quinine is in a mixture with Citric Acid, to be taken during effervescence with a solution containing Potassium Bicarbonate and Ammonium Carbonate. It is also given in solution with Hydrobromic Acid to diminish the tendency to Cinchonism. Milk covers the taste well. Effervescent Quinine Citrate is also a very palatable form.

When a large dose (say 10 grains) is given, it is best suspended in Water; the bitterness is not then so intense as when in solution.

It is best made into pills with 'Diluted Glucose.'

For hypodermic injection see other salts of Quinine, under each of which the solubilities are given. Of the neutral salts, the Lactate (1 in 4) is the most soluble; of the acid salts, the Acid Hydrochloride (1 in 1).

Quinine is precipitated from aqueous solutions of its salts by alkalis. In the Ammoniated Tincture of Quinine the alkaloid is dissolved by the Alcohol.

**Incompatibles.**—All Alkalies and their Carbonates, Benzoates, Iodides, and Salicylates; all infusions containing Tannin throw down a Quinine Tannate, which Sulphuric Acid, instead of dissolving, helps to precipitate.

**Official Preparations.**—Pilula Quininæ Sulphatis and Tinctura Quininæ Ammoniata. Used in the preparation of

Ferri et Quininæ Citras and Syrupus Ferri Phosphatis cum Quinina et Strychnina.

**Official in Austr., Ger., Hung., Jap., Russ. and Swiss, Chini-**  
**num Sulfuricum; Belg., Sulphas Quininæ; Dan., Norw. and**  
**Swed., Sulphas Chinicus; Dutch, Sulphas Chinini; Fr., Sulfate**  
**de Quinine Basique; Ital., Solfato di Chinina; Mex. and Port.,**  
**Sulfato de Quinina; Span., Sulfato Quinico; U.S., Quininæ**  
**Sulphas.**

**PILULA QUININÆ SULPHATIS. PILL OF QUININE**  
**SULPHATE.**

Triturate 30 grains of Quinine Sulphate with 1 grain of Tartaric Acid, and add them to the previously mixed Glycerin, 4 grains, and Tragacanth, 1 grain.

**Dose.**—2 to 8 grains = 0·13 to 0·52 grammes.

**TINCTURA QUININÆ AMMONIATA. AMMONIATED**  
**TINCTURE OF QUININE.**

Quinine Sulphate, 175 grains; Solution of Ammonia, 2 fl. oz.; Alcohol (60 p.c.), 18 fl.oz. (about 1 grain in 55 minimis)

When first made, the Tincture usually deposits a little, so it is better to allow a day or two to elapse before filtering.

**Dose.**— $\frac{1}{2}$  to 1 fl. drm. = 1·8 to 3·6 c.c.

When mixed with Water the Quinine is precipitated in a fine state of division, but the particles soon aggregate and adhere to the sides of the glass; therefore this preparation should not be prescribed in mixtures, unless Mucilage of Acacia be used to suspend the Quinine.

When prepared with Ammonium Carbonate instead of Liquor, the Tincture does not precipitate so badly, and it may be diluted with Water saturated with Carbonic Acid without any precipitation at all.

## RESINA.

RESIN.

A translucent, pale amber-coloured, brittle solid, having a terebinthinate odour. Readily reduced to powder. It is Officially described as the residue from the crude Oleo-Resin of various species of *Pinus*.

**Solubility.**—In almost all proportions of Alcohol (90 p.c.), Ether, and Oil of Turpentine; also in hot Olive Oil.

**Medicinal Properties.**—Antiseptic, and slightly stimulant. It is an ingredient of plasters, used for strapping wounds. The ointment forms a stimulating dressing for indolent ulcers and sores. Never used internally.

**Official Preparations.**—Emplastrum Resinæ and Unguentum Resinæ. Used in the preparation of Emplastrum Calefaciens, Emplastrum Cantharidis, Emplastrum Menthol, Emplastrum Picis, Emplastrum Plumbi Iodidi, Emplastrum Saponis.

**Resin Plaster** is contained in Emplastrum Belladonnae, Emplastrum Opii, also in Emplastrum Calefaciens.

**EMPLASTRUM RESINÆ.** RESIN PLASTER. *B.P.Syn.*—ADHESIVE PLASTER.

Resin, 4; Lead Plaster, 32; Hard Soap, 2. (1 in 9½)  
Now made with Hard Soap instead of Curd Soap.

**UNGUENTUM RESINÆ.** RESIN OINTMENT. *N.O.Syn.*—BASILICON OINTMENT.

Resin, in powder, 8; Yellow Beeswax, 8; Olive Oil (by weight), 8; Lard, 6. (1 in 3¾)

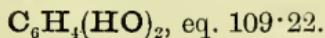
Olive Oil and Lard used in place of Almond Oil and Simple Ointment, and the quantity of Beeswax increased.

Not Official.

**RESORCINUM.**

RESORCIN.

METADIOXYBENZOLUM.



White, or nearly white, glistening, needle-shaped, or prismatic crystals, having a peculiar characteristic odour, and sweetish, pungent taste. It may be obtained by the destructive distillation of Brazilin, or by fusing Potassium Benzoldisulphonate with Potassium Hydroxide.

It should be kept in bottles of a dark actinic tint.

**Solubility.**—4 in 3 of Water; 4 in 3 of Alcohol (90 p.c.); 1 in 1 of Glycerin; 1 in 1 of Ether; 1 in 22 of Olive Oil.

**Medicinal Properties.**—A powerful antiseptic. It is also antipyretic, but it is very depressing to the heart, and is dangerous. As a spray (1 or 2 p.c.) in diphtheria and whooping-cough, *Pr. liv.* 381; 5 to 10 p.c. solutions in Glycerin; 5 to 10 p.c. ointments in skin diseases.—*B.M.J.* '88, i. 435; *L.* '88, i. 570; '90, ii. 1347; '91, ii. 505, 1185; *T.G.* '90, 279. In acne rosacea, *Pr. li.* 380; in pruritus, *M.A.* '95, 436; in diarrhoea and gastric affections, and as a local germicide and stimulant in ulcers and in pharyngitis and chronic rhinitis.—*Y.B.T.* '94, 463; in leucoplakia, *T.G.* '95, 181. Untoward effects when administered internally as a powder.—*L.* '98, ii. 779, 836; internal administration of 3 grains taken every four hours, followed by appearance of Phenol-sulphates in the urine and kidney disturbance.—*B.M.J.* '01, ii. 1266.

**Dose.**—1 to 5 grains = 0·06 to 0·32 grammes.

**Prescribing Notes.**—It is frequently prescribed in hair-lotions and washes, but when mixed with an alkali, e.g. Potassium Carbonate, the solutions rapidly darken in colour and acquire a strong green fluorescence, and such lotions frequently produce an unpleasant colouring effect on the hair, which, once produced, is somewhat difficult to remove. It is also incompatible with *Spiritus Ætheris Nitrosi*.

**Antidotes.**—White of egg; wash out the stomach with Soda or Saccharated Lime, well diluted; stimulants; Atropine; Amyl Nitrite.—*Murrell*.

In large doses it produces profuse perspiration, flushing of the face, and giddiness. Dr. Murrell describes a case of poisoning by 2 drm. of it which nearly proved fatal.—*M.T.* '81, ii. 487.

**Official in Austr.** Add., Dan., Dutch, Fr., Ger., Hung., Ital., Mex., Norw., Russ., Swed., Swiss and U.S.

**GARGARISMA RESORCINI.**—20 grains to 1 fl. oz. Water.—*Throat*.

**GLYCERINUM RESORCINI.**—Resorcin 1, Distilled Water 1, Glycerin, 3.—*Guy's*.

**LOTIO RESORCINI** (*Andeer's Lotion*).—Resorcin 40 grains, Water 1 fl. oz. Used as an antiseptic and stimulant in foul and syphilitic ulcerations, and to allay irritation in chronic eczema and psoriasis.—*British Skin*.

**PASTA RESORCINI FORTIOR** (*Lassar*).—Resorcin 20, Zinc Oxide 20, Powdered Starch 20, Liquid Paraffin 40.

**PASTA RESORCINI MITIS** (*Lassar*).—Resorcin 10, Zinc Oxide 25, Powdered Starch 25, Liquid Paraffin 40.

**PASTA ZINCI C. RESORCINO** (*Ihle's Paste*).—Resorcin, 10 grains; Zinc Oxide, Powdered Starch, Soft Paraffin and Wool Fat, of each 120 grains.—*Middlesex*.

**PIGMENTUM RESORCINI.**—Resorcin 96 grains, Glycerin of Borax to 1 fl. oz.—*Throat*.

**RESORCIN PLASTER MULL** (*Unna*).—Contains  $\frac{2}{3}$  grain to the square inch.

**SPIRITUS CAPILLARIS** (*Unna*).—Resorcin 60 grains, Castor Oil  $\frac{1}{2}$  fl. dram., Eau de Cologne  $1\frac{1}{2}$  fl. oz., Rectified Spirit to 6 fl. oz.

**UNGUENTUM RESORCINI.**—Resorcin 60 grains, Glycerin 1 fl. dram., Lanolin 2 dram., Soft Paraffin to 1 oz.—*London*.

**TRIBROMO-RESORCIN.**—Minute, white or whitish crystals. It is a powerful antiseptic and bactericide.—*P.J.* '99, ii. 216.

**Resorcini Monacetas** (*Euresol*).—A transparent yellow viscous mass, readily soluble in Acetone. An external application to the skin, more particularly the hairy portions.

**RESORCIN CAMPHOR.**—A liquid obtained by heating together equal parts of Camphor and Resorcin. Is superior to mercurial ointment in removing pediculi.—*P.J.* '96, i. 299, 326.

**RESORCINOL.**—Obtained by melting together equal volumes of Resorcin and Iodoform. It is a red-brown powder, partially

soluble in Water, soluble in Ether. Has been introduced as a substitute for Iodoform as a dressing.—*P.J.* '96, i. 446.

**ANUSOL** (Bismuth Iodo-resorcin-sulphonate), is employed in suppository form in the treatment of piles.—*P.J.* '96, ii. 378.

**FLUORESCEIN** (Resorcinol-Phthalein Anhydride).—An amorphous yellowish-red powder; almost insoluble in Water, in Alcohol (90 p.c.) and in Ether. Prepared by the action of Phthalic Anhydride on Resorcin. It dissolves readily in solutions of the alkaline hydroxides, e.g. Sodium Hydroxide, forming **Sodium Fluorescein**, a yellowish or greyish-red powder readily soluble in Water. In the form of a 2 p.c. solution it has been used for staining the denuded spots of the cornea, and has thus been found useful in the diagnosis of corneal ulcers.

**LIQUOR FLUORESCEIN.**—Fluorescein 8 grains, Sodium Bicarbonate 12 grains, Distilled Water 1 fl. oz.—*London Ophthalmic.*

### Not Official.

#### RHAMNI FRANGULÆ CORTEX.

*Syn.*—CORTEX FRANGULÆ.

The dried Bark of *Rhamnus Frangula*. Collected from the young Trunk and from the larger Branches, and kept at least one year before being used.

Official in B.P. '85, but not in B.P. '98.

**Medicinal Properties.**—Similar to those of *Rhamnus Purshianus*. A laxative or purgative for delicate constitutions and the aged.

A solid **Extract**, dose, 15 to 60 grains, was Official in B.P. '85, and is now in Dutch, Russ. and Swed.; a **Fluid Extract**, dose, 1 to 4 fl. drm., was Official in B.P. '85, and is now in Dan., Dutch Supp., Ger., Norw., Russ., Swed. and U.S.; Swed. also has a **Syrup**.

#### RHEI RADIX.

#### RHUBARB ROOT.

Yellow, or yellowish-brown, cylindrical, conical, or flattened irregular hard pieces, having a peculiar, somewhat aromatic odour, and bitter astringent taste. Though called Rhubarb Root, it really consists chiefly of the erect Rhizomes of *Rheum palmatum*, *R. officinale*, and probably other species, collected in North-Western China and Tibet.

**Medicinal Properties.**—Cathartic and astringent; the purgative effect precedes the astringent, and therefore is useful in diarrhoea when an aperient is indicated, but not in chronic constipation. Stomachic tonic in small doses. Given

in dyspepsia attended with constipation. It is non-irritant, suitable for delicate constitutions, and increases the effect of other cholagogues and cathartics ; useful in haemorrhoids. It is frequently combined with an antacid or carminative.

**Dose.**—3 to 10 grains = 0·2 to 0·65 grammes, for repeated administration ; for a single administration, 15 to 30 grains = 1 to 2 grammes.

**Prescribing Notes.**—*May be given in cachets, pills, mixtures, or Compressed Tablets. The compound powder is also prescribed in cachets, capsules, etc.*

4 grains of Powdered Rhubarb and 1 minim of ‘Dispensing Syrup’ make a nice pill. Sodium Bicarbonate in equal weight with Powdered Rhubarb counteracts the astringency, and covers the taste ; the addition of Peppermint Water still further hides it ; or 1 drop of Oil of Peppermint, 30 grains of Sugar, will disguise the taste of 15 grains of Powdered Rhubarb ; or 1 drop Oil of Caraway, 30 grains Sugar, and 10 grains of Powdered Rhubarb, make a good draught with Water to 1½ fl. oz.

**Official Preparations.**—Extractum Rhei, Infusum Rhei, Liquor Rhei Concentratus, Pilula Rhei Composita, Pulvis Rhei Compositus, Syrupus Rhei, Tinctura Rhei Composita.

**Not Official.**—Elixir Rhei, Extractum Rhei Compositum, Vinum Rhei, Purgatin and Ruminicin.

Official in all the Foreign Pharmacopœias.

### EXTRACTUM RHEI. EXTRACT OF RHUBARB.

Rhubarb Root, exhausted with Alcohol (60 p.c.), and the resulting liquor evaporated to dryness.

**Dose.**—2 to 8 grains = 0·13 to 0·52 grammes.

Official in Austr., with boiling Water ; Belg., Fr., Hung., Ital., Mex., Port., Russ. and Span., with Water ; Span., Alcoholic ; Dan., Dutch, Ger., Jap., Norw., Swed., Swiss and U.S. with Spirit and Water mixed ; Mex. and U.S. have also a Fluid Extract, 1 in 1.

### INFUSUM RHEI. INFUSION OF RHUBARB.

Rhubarb Root, in thin slices, 1 ; boiling Distilled Water, 20. Infuse fifteen minutes ; strain. (1 in 20)

Now 1 in 20 instead of 1 in 40 and the time is reduced.

**Dose.**—½ to 1 fl. oz. = 14·2 to 28·4 c.c.

Official in Belg., 1 and 13½ (at 90° C.) ; Fr. 1 in 200 cold ; Ital., 3 in 50 ; Span., 1 in 30 ; Mex., 1 in 50 ; Infusum Rhei Alkalinum. —Dan. and Norw., 1 in 8, Belg. and Swed., 1 in 10 ; Tinctura Rhei Aquosa.—Austr., 1 in 15 cold Water, Hung., 1 in 16, Ger., Russ. and Swiss, 1 in 10 ; Dutch, 1 Extract in 20 ; Jap. has a Compound Infusion.

**LIQUOR RHEI CONCENTRATUS.** CONCENTRATED  
SOLUTION OF RHUBARB.

10 of Rhubarb Root, percolated with Alcohol (20 p.c.), to yield 20.  
(1 in 2)

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

A Fluid Extract (1 in 1) is Official in U.S.

**PILULA RHEI COMPOSITA.** COMPOUND RHUBARB  
PILL.

Rhubarb Root, 3 oz.; Socotrine Aloes,  $2\frac{1}{4}$  oz.; Myrrh,  $1\frac{1}{2}$  oz.; Hard Soap,  $1\frac{1}{2}$  oz.; Oil of Peppermint,  $1\frac{1}{2}$  fl. dram.; Syrup of Glucose (by weight), about  $2\frac{3}{4}$  oz.

**Dose.**—4 to 8 grains = 0·26 to 0·52 grammes.

5 grains = about  $1\frac{1}{3}$  grain of Rhubarb and 1 grain of Aloes.

Official in Jap., Swiss and U.S.; U.S. has also Pilula Rhei, Rhubarb 20, Water q.s.

**PULVIS RHEI COMPOSITUS.** COMPOUND POWDER  
OF RHUBARB. *B.P.Syn.*—GREGORY'S POWDER.

Rhubarb Root, 2; Light Magnesia, 6; Ginger, 1. (1 in  $4\frac{1}{2}$ )

If a less bulky powder be desired, Heavy Magnesia is Officially permitted to be employed.

**Dose.**—20 to 60 grains = 1·3 to 4 grammes.

Official in Dutch Supp., Magnesia 7, Rhubarb 2, Ginger 1; Ger. (Pulvis Magnesiæ cum Rheo), Mag. Carb. 5, Sugar  $3\frac{1}{2}$ , Rhubarb  $1\frac{1}{2}$ , Oil of Fennel  $\frac{1}{10}$ ; Span. (Polvo de Magnesia con Ruibarbo), Carb. Magnes. 60, Sacch. 40, Rhei 15, Ol. Foenic. 1; Dan., Norw. and Swed. (Pulvis Magnesiæ c. Rheo), Carb. Magnes. 1, Sugar 1, Rhubarb 1, Oil of Fennel (Dan. and N.  $\frac{1}{50}$ , S.  $\frac{1}{100}$ ); also Russ. Carb. Magnes. 4, Sugar 2, Rhubarb 1, Oil of Fennel  $\frac{1}{25}$ ; Jap. (Pulvis Infantum), Carb. Magnes. 3, Rhubarb 1, Elæosacchari Fœniculi 2; Swiss (Pulvis Magnesiæ Compositus), Rhubarb 2, Sugar 3, Oil of Fennel  $\frac{1}{10}$ , Carb. Magnes. 5; U.S. Rhubarb 5, Magnesia 13, Ginger 2.

**SYRUPUS RHEI.** SYRUP OF RHUBARB.

Rhubarb Root, 1; Coriander Fruit, 1; Refined Sugar, 12; Alcohol (90 p.c.), 4; Distilled Water, 12; should yield about 20. The product should weigh nearly 40.

B.P. directions are not very satisfactory. It is more convenient to make a (1 in 4) fluid Extract of Rhubarb with Alcohol (60 p.c.); evaporate 8 fl. oz. of the fluid Extract to 3 fl. oz.; mix this and 5 minimis of Oil of Coriander, with 24 oz. of Sugar, and add Water to make the weight 40 oz.; dissolve in the cold, and filter.

**Dose.**— $\frac{1}{2}$  to 2 fl. dram. = 1·8 to 7·1 c.c.

Official in Austr., 1 in 26, with Potassium Carbonate; Belg., Syr. Rhei, and Syr. Rhei Compositus, both 1 in 20; Dan. and Dutch, 1 in 20, Hung., 1 in 27, Swed., 1 in 14, all with Sodium

Carbonate; Ger., Russ. and Swiss, with Cassia and Potassium Carbonate, 1 in 20; Ital., Sciroppo di Cicoria con Rabarbaro; Mex., Jarabe de achicoria y ruibarbo; Port., 1 in 20; Jap. and U.S., Syr. Rhei, 1 in 10, U.S. has also Syr. Rhei Aromaticus; Fr., Sirop de Rhubarbe Composé; all differ from Brit.

**TINCTURA RHEI COMPOSITA.** COMPOUND TINCTURE OF RHUBARB.

Rhubarb Root, 2; Cardamom Seeds,  $\frac{1}{4}$ ; Coriander Fruit,  $\frac{1}{4}$ ; Glycerin, 2; Alcohol (60 p.c.), q.s. to yield 20. (1 in 10)

Glycerin is added and Saffron omitted.

**Dose.**— $\frac{1}{2}$  to 1 fl. drm. = 1·8 to 3·6 c.e. for repeated administration; for a single administration, 2 to 4 fl. drm. = 7·1 to 14·2 c.e.

The corresponding Tinctures in Belg., Fr. and Ital. are 1 in 5; Dan., Ger., Jap., Norw., Russ., Swed. and U.S., 1 in 10.; Ger. and Russ. have also Tinctura Rhei Vinosa.

Not Official.

**ELIXIR RHEI** (*B.P.C.*).—Rhubarb Root, in No. 12 Powder, 5; Fennel Fruit, bruised, 2; Glycerin, 3; Refined Sugar, 4; a mixture of Alcohol (90 p.c.) 1, and Distilled Water 3, q.s. for the production of 20.

**Dose.**—1 to 3 fl. drm. = 3·6 to 10·6 c.e.

**EXTRACTUM RHEI COMPOSITUM** (*Ger.*).—Ext. Rhei 3, Ext. Aloes 1, Resina Jalapæ  $\frac{1}{2}$ , Soap 2.

**VINUM RHEI.**—Official in *B.P.* '85 ( $1\frac{1}{2}$  oz. to the 20 fl. oz.), but not in *B.P.* '98.

**PURGATIN, PURGATOL** (*Anthrapurpurin Diacetate*).—A yellow, or brownish-yellow, micro-crystalline powder, insoluble in Water, sparingly soluble in Alcohol (90 p.c.). Introduced as a synthetic purgative belonging to the series of oxyanthraquinones.

Useful in chronic constipation occurring along with neurasthenia, hypochondria, or haemorrhoids, where it is appropriately employed in place of Rhubarb and Aloes.

It has been pharmacologically examined by Professor Marshall and by Tunnicliffe who report that it is absorbed and in some measure excreted by the kidneys, probably as such or as anthrapurpurin. It colours the urine red.—*B.M.J.* '02, i. 1278; '02, ii. 1225; *L.* '02, i. 1475; *P.J.* '02, ii. 273; *C.D.* '02, i. 580; *Y.B.P.* '02, 202.

**Rumicin**, a dried extract from the Root of *Rumex crispus*, has been used as an eclectic preparation. It has properties similar to Rhubarb, dose, 1 to 5 grains = 0·06 to 0·32 gramme.

It must not be confounded with the crystalline substance Rumicin, which is allied to Chrysophanic Acid.

**RHŒADOS PETALA.****RED-POPPY PETALS.**

The bright scarlet-coloured, fresh Petals of *Papaver Rhœas*, possessing a peculiar narcotic odour and a mucilaginous bitter taste.

Chiefly used as a colouring agent.

**Official Preparation.**—Syrpus Rhœados.

**Official in Austr., Belg., Dutch; Fr., Coquelicot; Mex. and Span., Amapola; Swiss.**

**SYRUPUS RHŒADOS. SYRUP OF RED-POPPY.**

Dissolve (with heat) 36 of Sugar in a strained infusion of Red-Poppy Petals, 13, in Distilled Water, 20; preserve with  $2\frac{1}{2}$  of Alcohol (90 p.c.); total weight should be 58. (1 in  $3\frac{1}{2}$ )

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1.8 to 3.6 c.c.

This syrup is particularly liable to fermentation, and is therefore preserved by the addition of Alcohol (90 p.c.). In India and the Colonies the Alcohol may be increased up to twice the quantity ordered in the formula.

**Official in Belg., Dutch, Fr., Mex. and Span.**

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**Not Official.****RHUS TOXICODENDRON.****POISON IVY.**

The fresh Leaves of *Rhus radicans* are Official in U.S.; and a Tincture from them is given in doses of 1 to 5 minims for rheumatism. Fluid Extract (1 in 1) is also made.

*Rhus Glabra* (U.S.) and *Rhus Aromatica* have been used as tonics and astringents; given for nocturnal incontinence of urine. Both these can be supplied as Fluid Extracts (1 in 1), doses 5 to 10 minims = 0.3 to 0.6 c.c.

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**RICINI OLEUM.****CASTOR OIL.**

A colourless, or pale yellow, almost odourless, thick viscid fluid, possessing at first a mild and subsequently somewhat nauseous taste; expressed from the Seeds of *Ricinus communis*. Sp. gr. 0.950 to 0.970. It gradually thickens on exposure to air.

Ricinoleic Acid is stated to be the active principle. The Seeds contain a toxic phytalbumose, Ricin, which is extremely poisonous; it is not contained in the Oil.

**Solubility.**—Entirely soluble in all proportions of Absolute Alcohol, Ether, Oil of Turpentine and Glacial Acetic Acid; 1 in  $3\frac{1}{2}$  of Alcohol (90 p.c.).

**Medicinal Properties.**—A mild and speedy cathartic. It is the best purgative in constipation from indurated faeces, or after swallowing acrid substances. Used in diseases attended with irritation or inflammation of the bowels, as colic, and diarrhoea due to indigestible food, dysentery and the constipation of typhoid fever; the most suitable purgative after parturition, during pregnancy and after abdominal operations. The safest cathartic for infants, to whom a larger relative dose than to adults may be given; a small quantity in emulsion relieves infantile spasms. It may be administered in an enema with some mucilaginous fluid.

Dropped into the eye, it soothes the irritation caused by a foreign body.

The decoction of the leaves of *Ricinus* applied to the breast is said to produce an abundant secretion of milk.

**Dose.**—1 to 8 fl. drm. = 3·6 to 28·4 c.c.

**Prescribing Notes.**—*In draught suspended with mucilage of Gum Acacia, or in capsules, see below.*

*One of the least disagreeable modes of taking Castor Oil is to pour it on to some milk or cream contained in a wineglass, the interior and edges of which have been moistened with it.*

It is used as a solvent for alkaloidal bases in Ophthalmic practice.

**Official Preparations.**—*Mistura Olei Ricini.* Contained in Collodium Flexile, Linimentum Sinapis, and Pilula Hydrargyri Subchloridi Composita.

**Not Official.**—Capsules of Castor Oil, Emulsio Olei Ricini, and Enema Olei Ricini.

Official in all the Foreign Pharmacopceias.

#### **MISTURA OLEI RICINI. CASTOR OIL MIXTURE.**

To  $1\frac{1}{2}$  of Mucilage of Gum Acacia add with trituration in small portions alternately, 3 of Castor Oil and a mixture of Orange-Flower Water (undiluted) 1 and Cinnamon Water  $2\frac{1}{2}$ .

The Oil is now emulsified by means of Mucilage of Gum Acacia in place of saponification with Solution of Potassium Hydroxide, and Cinnamon Water replaces the Oils of Lemon and Cloves.

**Dose.**—As a draught, 1 to 2 fl. oz. = 28·4 to 56·8 c.c.

Not Official.

**CAPSULES OF CASTOR OIL.**—Flexible capsules containing 30 minims, or 60 minims, in each.

**EMULSIO OLEI RICINI.**—Castor Oil,  $\frac{1}{2}$  fl. oz.; Mucilage of Acacia,  $\frac{1}{2}$  fl. oz.; Syrup of Ginger,  $\frac{1}{4}$  fl. oz.; Cinnamon Water, 1 fl. oz.

Castor Oil,  $\frac{1}{2}$  fl. oz.; Yolk of Egg,  $\frac{1}{4}$  fl. oz.; Syrup,  $\frac{1}{4}$  fl. oz.  
Peppermint Water, 1 fl. oz.

Either of these formulas yields a good emulsion.

**ENEMA OLEI RICINI.**—Castor Oil, 2 fl. oz.; Mucilage of Starch, 18 fl. oz.

Castor Oil, 1 fl. oz.; Olive Oil, 5 fl. oz.

## **ROSÆ GALLICÆ PETALA.**

### RED-ROSE PETALS.

Dark purplish-red, velvety, claw-shaped petals, possessing a rosaceous odour, and a slightly acidulous, bitter, astringent taste. They usually occur in small, crumpled, conical masses, and are Officially described as the fresh and dried unexpanded Petals of *Rosa gallica*, from cultivated plants.

**Medicinal Properties.**—Astringent. Often used on account of their colouring matter.

**Prescribing Notes.**—*The Acid Infusion is an astringent tonic; it is also prescribed with Magnesium Sulphate as an aperient, and with Alum as an astringent gargle; the Syrup is used as a colouring agent, and the Confection as a pill excipient. The Nitric Acid Infusion is given with Quinine.*

**Official Preparations.**—Of the petals, *Confectio Rosæ Gallicæ*, *Infusum Rosæ Acidum*, and *Syrupus Rosæ*. The *confection* is contained in *Pilula Aloes Barbadensis*, *Pilula Aloes et Asafetidæ*, *Pilula Aloes Socotrinæ* and *Pilula Hydrargyri*.

**Not Official.**—*Extractum Rosæ Fluidum*, *Infusum Rosæ cum Acido Nitrico*, and *Mel Rosæ*.

### **CONFECTIO ROSÆ GALLICÆ.** CONFECTION OF ROSES.

Fresh Red-Rose Petals, 1; Refined Sugar, 3. (1 in 4)

Used as a pill basis. Also applied in aphthous conditions of the mouth.

### **INFUSUM ROSÆ ACIDUM.** ACID INFUSION OF ROSES.

Red-Rose Petals, dried and broken,  $\frac{1}{2}$  oz.; Diluted Sulphuric Acid, 2 fl. drm.; Distilled Water, boiling, 20 fl. oz.; infuse fifteen minutes. (1 in 40)

A similar infusion was in use in 1674.

Prescribed with Alum it forms a good **gargle**, but Borax or Alkalies change the colour to green.

**Dose.**— $\frac{1}{2}$  to 1 fl. oz. = 7·1 to 14·2 c.c.

### **SYRUPUS ROSÆ.** SYRUP OF ROSES.

Dissolve (with heat) 30 of Sugar in an infusion of dried

Red-Rose Petals, 2; Refined Sugar, 30; boiling Distilled Water, 20; the total weight should be nearly 46. (1 in 17 $\frac{1}{4}$ )

**Dose.**— $\frac{1}{2}$  to 1 fl. drm. = 1·8 to 3·6 c.c.

### Not Official.

**EXTRACTUM ROSÆ FLUIDUM (U.S.).**—1000 grammes of Roses, in No. 30 powder, percolated with a mixture of 100 c.c. Glycerin, and 900 c.c. of Diluted Alcohol until the powder is exhausted. Reserve the first 750 c.c., and evaporate the remainder to a soft extract, dissolve this in the reserved portion, and make up with Diluted Alcohol to 1000 c.c.

**INFUSUM ROSÆ CUM ACIDO NITRICO.**—Rose Petals, broken small, 2; Diluted Nitric Acid,  $\frac{1}{2}$ ; cold Distilled Water, 40; infuse two hours, frequently stirring, strain, and add Powdered Sugar, 1.

**MEL ROSÆ (U.S.).**—Fluid Extract of Roses 12 c.c., Clarified Honey, a sufficiency to make the product weigh 100 grammes.

## ROSÆ OLEUM.

### OIL OF ROSE.

*B.P.* *Syn.*—OTTO OF ROSE.

At a temperature of about 30° C. (86° F.), it is a pale yellow, or greenish-yellow, oily liquid, of about the consistency of Almond Oil. Sp. gr. 0·856 to 0·860. It has a very powerful rosaceous odour and somewhat sharp taste. At temperatures between 18° to 21° C. (64·4° to 69·8° F.), shining, acicular crystals, or glistening crystalline laminæ, separate out, and when further cooled the Oil sets to a semi-solid crystalline mass which again melts when gently warmed. It is Officially described as the Oil distilled from the fresh Flowers of *Rosa damascena*.

The vehicle of the odour is the elæoptene (Rhodinol) alone, and the less stearoptene there is in an otto used for manufacturing purposes the better.—*C.D.* '96, ii. 349.

**Medicinal Properties.**—The principal use in pharmacy is as a perfume in various preparations.

**Official Preparation.**—Contained in Unguentum Aquæ Rosæ.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Jap., Port., Russ., Swiss and U.S.**

## AQUA ROSÆ. ROSE WATER.

A clear, colourless liquid, possessing a strong rosaceous odour, prepared by distillation from the flowers of *Rosa*

*damascena*, and diluted, immediately before use, 1 to 2 of Distilled Water.

The Rose Water of commerce is a saturated solution of the essential oil of the Rose flowers.

**Medicinal Properties.**—An agreeable vehicle for medicines; employed in making lotions and eye-washes.

**Official Preparation.**—Unguentum Aquæ Rosæ. Contained in Mistura Ferri Composita, and the 'Rose Basis' for Lozenges.

**Official in Fr., Mex., Port. and Span., 1 of petals in 1; Belg. and Dutch, 1 in 2½; Ital., 1 in 2; Swiss, the Rose Water of commerce, undiluted; U.S., (Aqua Rosæ Fortior) the Rose Water of commerce (Aqua Rosæ), diluted with equal parts of Water.**

**UNGUENTUM AQUÆ ROSÆ.** ROSE-WATER OINTMENT. *N.O.Syn.*—COLD CREAM.

Heat until dissolved, Beeswax 1½ oz., Spermaceti 1½ oz., and Almond Oil (by weight) 9 oz.; transfer to a warmed mortar, and add gradually with trituration Rose Water (undiluted) 7 fl. oz.; finally mix in 8 minimis of Oil of Rose, and continue stirring until cold.

A similar formula occurs in several of the Foreign Pharmacopœias, see p. 188.

## ROSMARINI OLEUM.

OIL OF ROSEMARY.

*N.O.Syn.*—OLEUM ANTHOS.

A colourless, pale yellow, oily, limpid liquid, possessing a characteristic camphoraceous odour, and an aromatic and cooling taste. Sp. gr. 0·900 to 0·915. It is distilled from the Flowering Tops of *Rosmarinus officinalis*.

It should be preserved in well-closed bottles and protected from the light.

That distilled in Britain is superior to the imported.

**Solubility.**—In all proportions of Absolute Alcohol; 2 in 1 of Alcohol (90 p.c.); sparingly in Alcohol (60 p.c.).

**Medicinal Properties.**—Aromatic, stimulant and carminative. It is used in hair lotions and liniments as a stimulant; also used for its odour, which is disliked by insects.

**Dose.**—½ to 3 minimis = 0·03 to 0·18 c.c.

**Official Preparations.**—Spiritus Rosmarini. Contained in Linimentum Saponis, and Tinctura Lavandulae Composita.

**SPIRITUS ROSMARINI,** SPIRIT OF ROSEMARY.

**Oil of Rosemary, 1 ; Alcohol (90 p.c.), q.s. to yield 10.**

Now 1 in 10 instead of 1 in 50.

**Dose.**—5 to 30 minims = 0·3 to 1·8 c.c.

### Not Official.

#### RUTÆ OLEUM.

##### OIL OF RUE.

A colourless, or pale yellow, oily liquid, possessing an intense, persistent, characteristic odour. Sp. gr. 0·833 to 0·840. It is distilled from the fresh Herb of *Ruta graveolens*.

It was Official in B.P. '85.

**Medicinal Properties.**—Antispasmodic. A topical stimulant, rubefacient and vesicant. Administered in the form of enema for flatulent colic in children.

**Dose.**—1 to 4 minims = 0·06 to 0·24 c.c.

Official in Belg., Dutch Supp., Fr., Port. and Span.

### Not Official.

#### SABINÆ CACUMINA.

##### SAVIN TOPS.

The fresh and dried Tops of *Juniperus Sabina*, collected in spring from plants cultivated in Britain.

It was Official in B.P. '85.

**Medicinal Properties.**—A powerful local and general irritant. The ointment is used for maintaining discharges from granulating or blistered surfaces. It is a powerful emmenagogue, but its use requires caution, as it may cause inflammation of the abdominal and pelvic viscera.

**Dose.**—4 to 10 grains = 0·26 to 0·65 gramme.

**Antidotes.**—Stomach tube, emetics; Castor oil, Linseed poultices to the abdomen, opiates and demulcents.

Official in all the Foreign Pharmacopœias except Swed.

**OLEUM SABINÆ.**—A colourless, or pale yellow, oily liquid, possessing a peculiar, unpleasant, narcotic odour, and bitter, pungent, camphoraceous taste. Sp. gr. 0·910 to 0·930. It is liable to become darker in colour and to thicken on exposure to air. It should therefore be preserved in dark, amber-tinted, well closed bottles. It is distilled in Britain from fresh Savin.

**Solubility.**—4 in 1 of Alcohol (90 p.c.), in all proportions of Absolute Alcohol.

**Dose.**—1 to 4 minims = 0·06 to 0·24 c.c.; in pill with Soap and Liquorice powder, see p. 481.

Official in Belg., Dutch, Port. and U.S.

**TINCTURA SABINÆ.**—1 of Savin Tops, dried and coarsely powdered, percolated with Alcohol (60 p.c.), to yield 8.

**Dose.**—20 to 60 minimis = 1·2 to 3·6 c.c.

**UNGENTUM SABINÆ.**—Fresh Savin Tops, bruised, 8; Yellow Beeswax, 3; Benzoated Lard, 16; melt the Lard and the Beeswax together on a water-bath, add the Savin, digest twenty minutes, strain, and press through calico.

## SACCHARINUM. *See GLUSIDUM.*

### SACCHARUM LACTIS.

MILK SUGAR.

*B.P.Syn.*—LACTOSE.

$C_{12}H_{22}O_{11}$ ,  $H_2O$ , eq. 357·48.

White, or greyish-white, prismatic crystals, or masses of crystals, or as a white, odourless powder, possessing a slightly sweet taste. It is obtained from the Whey of Cow's Milk.

**Solubility.**—1 in 6 of cold Water; 1 in 1 of boiling Water; almost insoluble in Alcohol (90 p.c.).

**Medicinal Properties.**—Nutrient in various cases of extreme irritability of the stomach, as it does not ferment; it is used to mix with the food of children; dissolved in water, and mixed with cow's milk, it forms a good substitute for human milk. Has been found to act as a diuretic in cardiac dropsy. Useful for triturating with potent medicinal powders, in order to equally distribute the dose.

**Dose.**—60 to 120 grains = 4 to 8 grammes, or more in Water.

**Official Preparations.**—Used in the preparation of Extractum Belladonnæ Alcoholicum, Extractum Nucis Vomicæ, Extractum Physostigmatis, Extractum Strophanthi and Pulvis Elaterini Compositus.

### SACCHARUM PURIFICATUM.

REFINED SUGAR.

*B.P.Syn.*—SUCROSE.

$C_{12}H_{22}O_{11}$ , eq. 339·60.

Colourless, translucent, prismatic crystals, or a fine, white crystalline powder, possessing a sweet characteristic taste.

Permanent in the air. Obtained from the Juice of the Sugarcane.

**Solubility.**—100 in 45 of Water, measures 113; 1 in 100 of Alcohol (20 p.c.).

**Medicinal Properties.**—Nutrient, demulcent, used in catarrhal affections in the form of candy, syrup, etc.; also in irritant corrosive poisoning. Employed almost entirely as a sweetening agent and as a preservative, and to assist the suspension of powders. It assists the solution of Lime in Water.

It is taken as a respiratory fuel by men about to undertake violent physical exertion.

**Official Preparation.**—Syrupus. Sugar in some form is contained in all Syrups and Lozenges, several Confections, Mixtures, Pills and Powders.

#### **SYRUPUS. SYRUP.**

Dissolve 10 of Sugar in 5 of boiling Distilled Water, and finally make up the total weight to 15.

9 measures of Syrup contain 8 of Sugar.

Official in all the Foreign Pharmacopœias.

#### **Not Official.**

#### **SALEP.**

The prepared tubers of *Orchis Morio* and other species of *Orchis*.

**Medicinal Properties.**—Mucilaginous and nutrient.

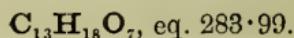
Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Mex., Norw., Port., Russ., Span., Swed. and Swiss.

**MUCILAGO SALEP.**—Powdered Salep 1; agitate well with cold Water 10; pour on this boiling Water 90, and stir till cold.

**Salib Misri**, the Salep of the Indian Bazaars, is derived from a species of *Eulophia*.

#### **SALICINUM.**

#### **SALICIN.**



Colourless, tabular crystals, or slender, white, shining, acicular crystals, possessing a very bitter taste. It is a glucoside occurring naturally in the Bark and Leaves of various species of *Salix*, and of *Populus*.

The Bark is obtained principally from Germany and America ; that grown in this country, even from the same species, yielding little or no Salicin.—C.D.'87, i. 171.

**Solubility.**—1 in 28 of Water ; 1 in 60 of Alcohol (90 p.c.) ; insoluble in Ether.

**Medicinal Properties.**—Antipyretic, antiperiodic, tonic, and bitter stomachic ; has been specially recommended in acute rheumatism. For the latter purpose it has been largely replaced by Sodium Salicylate, the action of which is more powerful, though not so well sustained, as Salicin ; but the Salicylate has a greater tendency to cause cardiac depression, and is not so well tolerated by the stomach as Salicin. Has been recommended for the prevention and cure of influenza.

Salicin and Salicylates in psoriasis.—*L.* '95, i. 1421 ; *P.J.* '95, ii. 51.

20-grain doses three times a day given with great success in a case of lupus erythematosus.—*L.* '02, ii. 157.

15-grain doses in psoriasis : the patches became paler, the scales more detachable and soon ceased to reform, while patch cleared in the centre, and finally the circle broke up.—*B.M.J.* '03, i. 656 ; *L.* '03, i. 784.

15 grains every four hours relieved the irritation and arrested maturation of the vesicles in small-pox.—*B.M.J.* '00, i. 16, 512, 1337 ; '00, ii. 127 ; '02, ii. 179 ; *P.J.* '02, ii. 113.

**Dose.**—5 to 20 grains = 0·32 to 1·3 grammes.

**Prescribing Notes.**—It is given in **cachets**. A good pill can be made by adding 'Diluted Glucose,' q.s.

**Not Official.**—Saligenin and *Salix Nigra*.

Official in Dutch Supp., Ital., Mex., Port. and U.S.

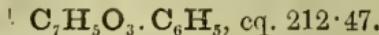
### Not Official.

**SALIGENIN.**—Small, tabular crystals, having a very faint, sweetish taste, soluble in Water, readily soluble in Alcohol (90 p.c.) and in Ether. It is obtained by the action of Formic Aldehyde on Phenol in alkaline solution, or by the action of emulsin or of diluted mineral acids on Salicin. It has been recommended in acute rheumatism and in gout.—*P.J.* (3) xxv. 755, 1115 ; '95, ii. 175. **Dose.**—4 grains = 0·26 grammes.

**SALIX NIGRA.**—The Bark has been recommended as a sexual and general sedative.—*B.M.J.* '87, ii. 237 ; *L.* '88, i. 869.

Its virtues are probably due to Salicin, which exists in all species of *Salix* (Willow).

The dose of the **Fluid Extract** (1 in 1) is 30 to 60 minims = 1·8 to 3·6 c.c.

**SALOL.****PHENYL SALICYLATE.**

Colourless, translucent, needle-shaped crystals, or a white micro-crystalline powder, possessing a peculiar aromatic odour, and very little taste. It is the Salicylic Ester of Phenol.

**Solubility.**—1 in 12 of Alcohol (90 p.c.), 2 in 1 of Ether, 3 in 1 of Chloroform; 1 in 4 of Almond Oil; 1 in 10 of Liquid Paraffin. Insoluble in cold Water.

**Medicinal Properties.**—Antipyretic, antiseptic, and intestinal disinfectant. It passes through the stomach unchanged, and is decomposed in the duodenum by the alkali of the pancreatic juice. It has been recommended in acute and chronic rheumatism, in cholera, and in typhoid fever. The best antiseptic for intestinal dyspepsia and fermentation. Useful in diarrhoea. When given in excessive doses, or repeated frequently, has given rise to toxic symptoms. Externally it is used for the same purposes as Iodoform.

Combined with a blood tonic in the treatment of anaemia, *M.A.* '95, 103; and pernicious anaemia, *L.* '94, ii. 1274; in diarrhoea of phthisis, *Pr.* liii. 275; in choleraic diarrhoea, *T.G.* '94, 40; good result in gonorrhœa, *L.* '90, i. 644; an intestinal and urinary disinfectant, *B.M.J.* '93, i. 643.

Owing to its low melting point (about 108° F. = 42° C. it is useful in filling up irregular or superficial bone cavities; also as a stopping for carious teeth.—*B.M.J.E.* '96, i. 64; *P.J.* '95, ii. 216.

Formation of Salol calculus from its internal administration. *B.M.J.* '97, ii. 78; *P.J.* '97, ii. 446.

**Dose.**—5 to 15 grains = 0.32 to 1 grammie.

**Prescribing Notes.**—It is given in cachets, mixtures, powders, or Compressed Tablets. In mixtures it should be suspended with Compound Tragacanth Powder; but it is best dissolved in a fixed Oil, and emulsified by Gum Acacia (see below *Emulsio Salol*). Salol with  $\frac{1}{8}$  of Compound Tragacanth Powder, will make a good pill with 'Diluted Glucose.'

A good mouth-wash can be made by dissolving 60 grains of Salol in 6 fl. oz. of Alcohol (90 p.c.), and adding 10 minimis of Oil of Peppermint and 5 minimis of Oil of Anise. It can, if desired, be sweetened with an addition of  $\frac{1}{10}$  grain of Saccharin.

**Not Official.**—Emulsio Salol, Salol Camphor, and Salophen.

**Official in Dan., Dutch Supp., Fr., Ger., Ital., Mex., Norw., Russ., Swed., Swiss and U.S.**

## Not Official.

**EMULSIO SALOL.**—Salol, 40 grains; Almond Oil, 4 fl. dram.; Powdered Gum Acacia, 120 grains; Syrup, 2 fl. dram.; Peppermint Water to 2 fl. oz.

**SALOL CAMPHOR.**—Prepared by moistening 1 of Camphor with Alcohol and triturating it with 1½ Salol till a transparent liquid is obtained. Has been found useful in treatment of furuncles and carbuncles.—*B.M.J.E.* '95, ii. 84.

**SALOPHEN** (Acetylparamidophenol Salicylate).—A white, crystalline powder, insoluble in Water, soluble in Alcohol and in Ether.

**Medicinal Properties.**—Analgesic and antipyretic. Has been recommended in acute and subacute rheumatism, and in neuralgia.

**Dose.**—10 to 30 grains = 0·65 to 2 grammes, usually given in cachets.

Official in Dutch Supp. and Swed.

**SAMBUCI FLORES.**

## ELDER FLOWERS.

The Flowers of *Sambucus nigra*, separated from the stalks.

**AQUA SAMBUCI.** ELDER-FLOWER WATER.

Fresh Elder Flowers, 1 (or an equivalent quantity of the Flowers preserved whilst fresh with Common Salt); Water, 5; distil 1. (1 in 1)

Chiefly used for lotions and collyria.

**SANTALI OLEUM.**

## OIL OF SANDAL WOOD.

*B.P.Syn.*—OIL OF SANTAL Wood.

A pale yellow, or yellow, somewhat viscid, oily liquid, having a characteristic, persistent, aromatic odour, and unpleasant, nauseous taste. Sp. gr. 0·975 to 0·980.

It is distilled from the Wood of *Santalum album*.

The chief constituent of the Oil is an alcohol Santalol, which is capable of determination by acetylation. The Supplement to the Dutch Pharmacopœia requires a Santalol-content of at least 90 p.c., and good oils mostly contain from 93 to 98 p.c.

The Oil should be kept in well-closed vessels, and as far as possible protected from the light.

**Solubility.**—In less than its own weight of Alcohol (90 p.c.).

**Medicinal Properties.**—A stimulating disinfectant to the mucous membranes of the bladder and urethra, and also of the bronchial mucous membrane ; has been prescribed extensively for subacute and chronic gonorrhœa ; it is best taken about an hour and a half after meals.

**Dose.**—5 to 30 minims = 0·3 to 1·8 c.c.

**Prescribing Notes.**—Generally given in capsules or in a mixture suspended with Mucilage of Acacia, or Tragacanth. It is best taken in Capsules, as the taste is nauseous. Sometimes prescribed with Buchu and Cubes.

**Not Official.**—Capsules of Sandal Oil, *Mistura Olei Santali*, and Gonal.

**Official in Austr., Dan., Ger., Norw., Span., Swiss and U.S.**

#### Not Official.

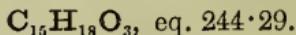
**CAPSULES OF SANDAL OIL.**—Containing 10 and 20 minims in each.

**MISTURA OLEI SANTALI.**—*Oleum Santali*, 30 minims ; Mucilage of Acacia, 1 fl. dram. ; Syrup, 1 fl. dram. ; Tincture of Orange, 30 minims ; Water to 1 fl. oz., for a dose three times a day.

**GONAL.**—A colourless, oily liquid, sp. gr. 0·978 to 0·980, containing the alcoholic constituents of Sandal-wood Oil. It has a faint odour of the latter. An irritating, sesquiterpene Santalene is stated to be removed during its preparation. Introduced as a purified Sandal-wood Oil, and recommended for urethritis and gonorrhœa. **Gonoral** was a somewhat similar preparation.—*B.M.J.* '01, i. 1407 ; '01, ii. 512 ; *P.J.* '99, ii. 34 ; '00, i. 333.

## SANTONINUM.

### SANTONIN.



Colourless, odourless, pearly, tabular crystals, or rhombic prisms, possessing a faint bitter taste. It is the anhydride or lactone of Santonic Acid, and is prepared from Santonica, or Worm-Seed, the dried, unexpanded Capitula or Flower-Heads of *Artemisia maritima*.

On exposure to light, more especially to direct sunlight, it acquires a yellow colour, and should therefore be preserved in dark amber-tinted bottles.

**Solubility.**—Sparingly in Water ; 1 in 350 of boiling Water ; 1 in 40 of Alcohol (90 p.c.) ; 1 in 4 of boiling Alcohol (90 p.c.) ; 1 in 160 of Ether ; 1 in 2 of Chloroform ; about 1 in 400 of Olive Oil ; slightly in Glycerin and in Solution of Potassium Hydroxide.

**Medicinal Properties.**—Anthelmintic. Useful both for round worms and thread-worms. It frequently affects the vision, causing all objects to appear yellow or green; to avoid this unpleasantness, Santonin is given at night, the disturbance of vision then remains only for half an hour or so, after the patient awakes in the morning.

**Dose.**—2 to 5 grains = 0·13 to 0·32 grammes.

*Ph.Ger.* maximum single dose, 0·1 grammes; maximum daily dose, 0·3 grammes.

**Prescribing Notes.**—2 to 3 grains for children, best given with Castor Oil. About three doses are sufficient; one every other night, followed by a brisk cathartic the morning after each dose. The suppository is useful in thread-worms.

Castor Oil has been recommended as a solvent for Santonin, but it will not dissolve 1 in 100: even if heat be applied, part of the Santonin will crystallise out on cooling.

**Official Preparation.**—Trochiscus Santonini.

**Not Official.**—Suppositorium Santonini, Pulvis Santonini Compositus Infantilis, Pulvis Santonini et Scammonii, and Artemisin.

On account of the similarity in crystalline form, and in consequence of several accidents due to the contamination of Santonin with Strychnine, *Ger.* and *U.S.* include a test for the latter substance.

### TROCHISCUS SANTONINI. SANTONIN LOZENGE.

1 grain of Santonin in each lozenge, with Simple Basis.

**Dose.**—1 to 5 lozenges.

Not Official.

**SUPPOSITORIUM SANTONINI.**—Santonin 3 grains, with Oil of Theobroma.

**PULVIS SANTONINI COMPOSITUS INFANTILIS.**—Santonin, 1 grain; Calomel,  $\frac{1}{2}$  grain; Compound Powder of Scammony,  $2\frac{1}{2}$  grains.—London.

**PULVIS SANTONINI ET SCAMMONII.**—Santonin, 1 grain; Compound Powder of Scammony, 2 grains.—Victoria.

Artemisin (Oxysantonin) occurs in colourless crystals, becoming yellow on exposure to light, and is extracted from the mother liquors after separating the Santonin.—*P.J.* '02, i. 294, 489; *C.D.* '02, i. 14.

15 grains given in three doses at intervals of three hours to relieve the lightning pains of tabes.—*B.M.J.E.* '01, i. 80; *T.G.* '01, 613.

**SAPO ANIMALIS.****CURD SOAP.**

A white or whitish solid, possessing a characteristic physical appearance, dry and saponaceous to the touch. It is prepared by the saponification of a purified animal fat with Sodium Hydroxide, and is Officially permitted to contain about 30 p.c. of Water.

For the purpose of powdering it is not affected injuriously by drying at a temperature of 212° F. (100° C.).

**Solubility.**—Sparingly in Water; 1 in 1½ of boiling Water; partially in Alcohol (90 p.c.); almost entirely, 1 in 2 of boiling Alcohol (90 p.c.).

**Official Preparations.**—Used in the preparation of Extractum Colocynthidis Compositum, Linimentum Potassii Iodidi cum Sapone, and Pilula Scammonii Composita.

**Official in Austr.,** Sapo Medicinalis; **Belg.,** Sapo Animalis; **Dan. and Norw.,** Sapo Butyraceus; **Fr.,** Savon Animal; **Hung.,** Sapo Albissimus Drogistarum; **Ital.,** Sapone Animale; **Port.,** Sabao Animal; **Russ.,** Sapo Sebacinus; **Mex. and Span.,** Jabon Animal; **Swiss,** Sapo Stearinicus; **Ger., Jap. and Russ.,** Sapo Medicatus, made with Lard and Olive Oil.

**Emplastrum Saponis.**—Formerly made with Curd Soap; now made with Hard Soap. *See SAPO DURUS.*

**SAPO DURUS.****HARD SOAP.**

A solid, answering to the description given under 'Sapo Animalis,' but made by saponifying Olive Oil with Sodium Hydroxide. It is Officially permitted to contain about 30 p.c. of Water.

Sapo Animalis is essentially Sodium Stearate, and Sapo Durus is essentially Sodium Oleate, but no confirmatory tests appear in the Pharmacopeia.

**Solubility.**—The greater part is soluble 1 in 20 of Water; entirely 1 in 1½ of boiling Water; 1 in 2 of boiling Alcoliol (90 p.c.).

We found that of 30 grains of White Castile Soap digested for four days in 1 oz. of cold Alcohol (90 p.c.), only 24 grains were dissolved; when heated it all dissolved.

**Medicinal Properties.**—Laxative and antacid. Combined with Rhubarb, it is administered as an antacid in dyspepsia attended with constipation. Large and frequent doses are most effective in removing gall-stones. Hard Soap,

but more frequently Soft Soap, is made into a lather with Water for use as an enema,  $\frac{1}{2}$  to 1 oz. to a pint of Water.

The Liniment is used as a counter-irritant and deobstruent and is useful in sprains and rheumatic pains, and stiffness of joints.

**Dose.**—5 to 15 grains = 0·32 to 1 grammie.

**Prescribing Notes.**—*Best given in wafer paper or in cachets.*

**Official Preparations.**—Emplastrum Saponis, and Pilula Saponis Composita. Contained in Emplastrum Resinæ, Pilula Aloes Barbadensis, Pilula Aloes et Asafetidæ, Pilula Aloes Socotrinae, Pilula Cambogiæ Composita, Pilula Rhei Composita, Pilula Scillæ Composita. Used in the preparation of Hydrargyri Oleas and Unguentum Zinci Oleatis. Soap Plaster is contained in Emplastrum Calefaciens, and Emplastrum Cantharidis.

**Official in Austr. and Hung.,** Sapo Venetus; Belg. and Dutch, Sapo Medicatus; Dan., Sapo Medicatus and Sapo Albus Oleaceus; Norw., Sapo Albus Oleaccus; Russ., Sapo Hispanicus Albus; Span., Jabon de Sosa; Swed., Sapo Medicatus; Swiss. Sapo Oleaceus; U.S., Sapo. With **Almond Oil**—Fr., Savon Médicinal; Hung., Sapo Medicinalis; Ital., Sapone Medicinale; Mex., Jabon Medicinal; Port., Sabao Vegetal; Span., Jabon Amigdalino. With **Lard** and **Olive Oil**—Ger., Jap. and Russ., Sapo Medicatus.

### EMPLASTRUM SAPONIS. SOAP PLASTER.

Hard Soap, 6; Lead Plaster, 36; Resin, 1. Melt each ingredient separately at a low temperature; mix; evaporate, with constant stirring, to a proper consistence.

(1 of Soap in  $7\frac{1}{6}$ )

Now made with Hard Soap instead of Curd Soap.

Emplastrum Saponis—Belg., 1 in 15; U.S., 1 in 10; Emplastrum Saponatum—Austr., 1 in 6; Dan., 1 in 11; Dutch Supp., 1 in  $16\frac{2}{3}$ ; Ger., 1 in 17; Hung., about 1 in  $15\frac{1}{2}$ ; Norw., about 1 in 17; Russ., 1 in  $17\frac{1}{2}$ ; Swiss, 1 in 10; Emplastrum Saponaceum—Swed., 1 in 9; Emplâtre de Savon—Fr., 1 in 18; Emplasto de Jabon—Mex., 1 in 18; Emplastro de Sabao—Port., 1 in  $12\frac{1}{2}$ ; Emplasto de Jabon—Span., about 1 in 16.

### LINIMENTUM SAPONIS. See SAPO MOLLIS.

### PILULA SAPONIS COMPOSITA. See OPIUM.

#### Not Official.

**EUNATROL** (Sodium Oleate).—Under this proprietary title has been introduced a substance containing pure Sodium Oleate. Stated to be useful as a cholagogue. Yellowish-white fatty solid possessing a faint odour of Oleic Acid. Best prescribed in pills or capsules. Dose, 10 to 15 grains = 0·65 to 1 grammie, twice daily.—P.J.'02, i. 6.

**SAPO MOLLIS.** SOFT SOAP.

A yellowish-white, or yellowish-green, unctuous semi-solid, prepared from Olive Oil, but using Potassium Hydroxide in place of Sodium Hydroxide as the saponifying agent.

**Solubility.**—1 in 4 of Water; 1 in 1 of boiling Water; almost entirely 1 in 1 of Alcohol (90 p.c.).

**Official Preparation.**—Linimentum Saponis. Contained in Linimentum Tcrebinthinæ. **Soap Liniment** is contained in Linimentum Opii.

**Not Official.**—Sapo Kalinus Venalis, Solutio Saponis Ætherea, Spiritus Saponis Kalini, Mollin.

**Official in Austr., Dutch, Ger., Jap., Russ. and Swiss, Sapo Kalinus;** Ger. and Swiss, also Sapo Kalinus Venalis; Belg., Russ., Swed. and Hung., Sapo Kalinus and Sapo Kaiinus Venalis; Ital., Sapone di Potassa; U.S., Sapo Mollis. Dutch Supp. includes a super-fatted Potash Soap, Sapo Superadipatus.

**LINIMENTUM SAPONIS.** LINIMENT OF SOAP.

Soft Soap, 2 oz.; Camphor, 1 oz.; Oil of Rosemary, 3 fl. drm.; Alcohol (90 p.c.), 16 fl. oz.; Distilled Water, 4 fl. oz. Dissolve the Soap in the Water, and mix it with the Camphor and Rosemary dissolved in the Alcohol; after a week, filter.

**Not Official.**

**SAPO KALINUS VENALIS** (*Ger.*).—A yellowish-brown, or greenish, translucent soap, prepared from Linseed Oil with Potash. For use in skin diseases.

**SOLUTIO SAPONIS ÆHEREA.** *Syn.* ETHER SOAP.—Oleic Acid, 7 fl. oz.; Alcohol (90 p.c.), 3 fl. oz. Mix and neutralise with about  $\frac{1}{2}$  fl. oz. saturated solution of Potassium Hydroxide (1 in 1 of Water); when cool add Oil of Lavender, 20 minimis; Methylated Ether, sp. gr. 0·720, to 20 fl. oz.—*St. Thomas's.*

**SPIRITUS SAPONIS KALINI** (*Hebra*).—Soft Soap, 24; Alcohol (90 p.c.), 12; Spirit of Lavender, 1.

**MOLLIN.**—A Soft Soap, containing 17 p.c. of uncombined fat and 30 p.c. of Glycerin.

It has been recommended as a basis for ointments.

**SAPPAN.**

The Heart-wood of *Cæsalpinia Sappan*, and a Decoction Sappan (1 in 20), dose,  $\frac{1}{2}$  to 2 fl. oz. = 14·2 to 56·8 c.c., are Official in the *Ind.* and *Col.* *Add.* for India and the Eastern Colonies.

**SARSÆ RADIX.****SARSAPARILLA.**

The dried Root of *Smilax ornata*.

Several commercial varieties of which are known. The British Pharmacopœia have made the 'Jamaica Sarsaparilla,' imported from Costa Rica, Official. The U.S. use *Smilax officinalis*, *medica*, *papyracea*, and other undetermined species of *Smilax*.

**Medicinal Properties.**—Alterative and tonic; opinions differ as to its efficacy. The Compound Decoction has been given in secondary syphilis, chronic rheumatism and skin diseases, alone or in combination with other remedies such as Potassium Iodide.

**Incompatibles.**—Alkalies; they accelerate its decomposition.

**Official Preparations.**—Extractum Sarsæ Liquidum, Liquor Sarsæ Compositus Concentratus.

**Official** in all the Foreign Pharmacopœias.

**EXTRACTUM SARSÆ LIQUIDUM.** LIQUID EXTRACT OF SARSAPARILLA.

A Liquor obtained by repercolation of Sarsaparilla with Alcohol (20 p.c.), until 18 represents 20 of Root, then 2 of Glycerin is added. (1 root in 1)

Now made by repercolation with diluted Alcohol as suggested in the *Companion*, and Glycerin is used in place of Sugar.

**Dose.**—2 to 4 fl. drm. = 7·1 to 14·2 c.c.

**Official** in Mex. and U.S., 1 in 1. Belg., Fr., Ital., Mex., Port. and Span. have a solid extract.

**LIQUOR SARSÆ COMPOSITUS CONCENTRATUS.** CONCENTRATED COMPOUND SOLUTION OF SARSAPARILLA.

Sarsaparilla, cut transversely and bruised, 20; Sassafras Root, in shavings, 2; Guaiacum Wood, in shavings, 2; Dried Liquorice Root, bruised, 2; Mezereon Bark, cut small, 1; Alcohol (90 p.c.), 4½. Infuse the Sarsaparilla in three successive portions of 100 of Distilled Water, for one hour each, at 160° F. (71·1° C.). Boil the other solid ingredients with Distilled Water until exhausted. Rapidly concentrate the mixed infusion and decoction until, when cold, the liquid measures 16; add the Alcohol; set aside for at least fourteen days; filter. The product should measure 20. (1 in 1)

**Dose.**—2 to 8 fl. drm. = 7·1 to 28·4 c.c.

This formula is practically the same as that which has been given in preceding editions of the *Companion*, under the heading,

'Extractum Sarsæ Liquidum Compositum'; the ingredients are similar to those of Decoctum Sarsæ Compositum, B.P. '85.

## SASSAFRAS RADIX.

### SASSAFRAS ROOT.

The dried Root of *Sassafras officinale*.

It contains a yellowish, or reddish-yellow, Volatile Oil (Oil of Sassafras), which is largely distilled in America, and is Official in U.S.; the yield is about 2 p.c. The bulk of this Oil consists of Safrol,  $C_{10}H_{10}O_2$ , a compound also extracted from Oil of Camphor. It is much used for scenting soaps.

**Medicinal Properties.**—Aromatic, stimulant and dia-phoretic. Used as an adjuvant to other medicines.

**Official Preparation.**—Contained in Liquor Sarsæ Compositus Concentratus.

**Official in** Austr., Belg., Dutch, Fr., Jap., Mex., Port., Span. and Swiss, the Root; Ger. and U.S., the Root-bark.

**SASSAFRAS MEDULLA.** Sassafras Pith (U.S.)—It abounds in a gummy matter, which forms a mucilage with Water. 60 grains of Pith to 20 fl. oz. is used as a soothing application to the eyes, and as a drink in diarrhoea.

**OLIVERI CORTEX.** *Syn. BLACK SASSAFRAS.*—The dried Bark of *Cinnamomum Oliveri* is Official in the Ind. and Col. Add. for the Australasian Colonies. 'Also Tinctura Oliveri Corticis, 1 in 10 (Alcohol 60 p.c.); dose, 30 to 60 minimis = 1·8 to 3·6 c.c.'

## SCAMMONIÆ RADIX.

### SCAMMONY ROOT.

The dried brownish, or yellowish-grey, perennial tapering Root of *Convolvulus Scammonia*.

From Syria and Asia Minor.

**Official Preparation.**—Used in the preparation of Scammoniæ Resina.

## SCAMMONIÆ RESINA.

### SCAMMONY RESIN.

Greenish-grey, or brownish-green, translucent, brittle lumps, with more or less sharp edges, and breaking with a shining fracture. It has a peculiar, characteristic odour.

It is prepared by exhausting Scammony Root with Alcohol

(90 p.c.), recovering the greater part of the Alcohol, and pouring the concentrated liquid into Distilled Water, which precipitates the Resin.

**Solubility.**—It is soluble in almost all proportions of Alcohol (90 p.c.) or Ether; also soluble in Solution of Potassium Hydroxide.

The purified Resin is known in this country as **Scammonin**, see p. 384.

**Medicinal Properties.**—An energetic, hydragogue cathartic. May be used when brisk action is needed, as in cerebral congestion and severe dropsy; but on account of its griping properties it is rarely used alone. In combination it promotes the action of other medicines, whilst its own harshness is mitigated. It acts also as an anthelmintic.

**Dose.**—3 to 8 grains = 0·2 to 0·52 grammie.

**Official Preparations.**—Pilula Scammonii Composita and Pulvis Scammonii Compositus. Contained in Extractum Colocynthidis Compositum, Pilula Colocynthidis Composita, and Pilula Colocynthidis et Hyoscyami.

#### **PILULA SCAMMONII COMPOSITA.** COMPOUND SCAMMONY PILL.

Scammony Resin, 1; Jalap Resin, 1; Curd Soap, in powder, 1; Tincture of Ginger, 3; dissolve, and evaporate to pill consistence.

**Dose.**—4 to 8 grains = 0·26 to 0·52 grammie.

#### **PULVIS SCAMMONII COMPOSITUS.** COMPOUND POWDER OF SCAMMONY.

Scammony Resin, 4; Jalap, 3; Ginger, 1. (1 in 2)

**Dose.**—10 to 20 grains = 0·65 to 1·3 grammie.

### **SCAMMONIUM.**

#### SCAMMONY.

Brown, dark grey, or brownish-black, irregular masses, or circular cakes, breaking with a glossy, resinous fracture. It possesses a peculiar, cheese-like odour.

It is Officially described as a Gum Resin, Obtained by incision from the living Root of *Convolvulus Scammonia*. known in commerce as Virgin Scammony.

Chiefly from Smyrna, in Asia Minor.

**Solubility.**—Almost entirely dissolved in boiling diluted Alcohol.

**Medicinal Properties.**—Similar to those of Scammony Resin, but Scammony emulsifies with Water, the Resin does not.

**Dose.**—5 to 10 grains = 0·32 to 0·65 grammes.

Official in Fr., Mex., Port., Span., Swiss and U.S.

## SCILLA.

### SQUILL.

The Bulb of *Urginca Scilla*, divested of its dry membranous outer scales, cut into slices, and dried.

From the Mediterranean coasts.

Two active principles have been extracted from Squill, **Scillitoxin** (Scillain) and **Scillipicrin**, both of which strongly affect the heart; but their actions are antagonistic.

Under the title of **Urginea**, *Syn.* Indian Squill, the younger bulbs of *Urginca Indica*, also the younger bulbs of *Scilla Indica*, are Official in the *Ind.* and *Col. Add.*, for India and the Eastern Colonies.

**Medicinal Properties.**—A stimulant expectorant, diuretic and cardiac tonic, acting similarly to Digitalis, but is more irritating to the gastro-intestinal mucous membrane. It increases the secretion of the bronchial mucous membrane and aids the expectoration of mucus. The Tincture diluted with Water may be taken frequently to relieve the cough of chronic bronchitis (contra-indicated in acute bronchitis). As an expectorant, it is also used with Ipecacuanha and Ammonia. In dropsy, especially if cardiac in origin, it is combined with Blue Pill and Digitalis.

**Dose.**—1 to 3 grains = 0·065 to 0·2 grammes.

**Official Preparations.**—Acetum Scillæ, Oxymel Scillæ, Pilula Scillæ Composita, and Tinctura Scillæ. Contained in Pilula Ipecacuanhæ cum Scilla. The **Vinegar** is used in the preparation of Syrupus Scillæ.

Official in all the Foreign Pharmacopœias; Fr., Scille; Mex. and Span., Escila.

### ACETUM SCILLÆ. VINEGAR OF SQUILL.

2½ of Squill, bruised, macerated with Diluted Acetic Acid, q.s. to yield 20. (1 in 8)

It is conveniently filtered through Talc.

**Dose.**—10 to 30 minims = 0·6 to 1·8 c.c.

Official in Austr., Dan., Dutch, Fr., Ger., Hung., Ital., Mex., Norw., Port., Swiss and U.S., 1 in 10; Belg., about 1 in 12, All by weight except U.S.

A corresponding preparation, **Acetum Urgineæ**, is Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

### **OXYMEL SCILLÆ. OXYMEL OF SQUILL.**

Squill, bruised,  $2\frac{1}{2}$ ; Acetic Acid,  $2\frac{1}{2}$ ; Distilled Water, 8; Clarified Honey, liquefied, *q.s.* to bring the fluid to sp. gr. 1.320. (about 1 in 15)

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1.8 to 3.6 c.c.

A corresponding preparation, **Oxymel Urgineæ**, is Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

### **PILULA SCILLÆ COMPOSITA. COMPOUND SQUILL PILL.**

Squill,  $1\frac{1}{4}$ ; Ginger, 1; Ammoniacum, 1; Hard Soap, 1; Syrup of Glucose (by weight), about 1. (about 1 in 4)

**Dose.**—4 to 8 grains = 0.26 to 0.52 gramme.

**Official in Belg.**, 1 in 7.

A corresponding preparation, **Pilula Urgineæ Composita**, is Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

### **SYRUPUS SCILLÆ. SYRUP OF SQUILL.**

Vinegar of Squill, 20; Refined Sugar, 38; it should yield 58 by weight. (about 1 of Squill in 18)

Quantity of Sugar reduced from 40 to 38. .

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1.8 to 3.6 c.c.

**Official in Belg.**, Vinegar of Squill 347, Sugar 653; by weight; U.S., Vinegar of Squill 45, Sugar 80; Water to measure 100.

A corresponding preparation, **Syrupus Urgineæ**, is Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

### **TINCTURA SCILLÆ. TINCTURE OF SQUILL.**

1 of Squill, bruised, macerated with 5 of Alcohol (60 p.c.).

Now 1 in 5 instead of 1 in 8.

**Dose.**—5 to 15 minims = 0.3 to 0.9 c.c.

**Official in Belg.**, Fr., Ger., Ital., Jap., Mex., Port., Span. and Swiss, 1 in 5; all by weight; U.S., 15 in 100.

A corresponding preparation, **Tinctura Urgineæ**, is Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

### **SCOPARII CACUMINA.**

BROOM TOPS.

The fresh and the dried Tops of *Cytisus scoparius*, a woody

shrub indigenous to England, and also found throughout the greater part of Europe.

**Medicinal Properties.**—Diuretic and in large doses cathartic. Employed in dropsical complaints, especially if cardiac, and often prescribed along with Potassium salts and Digitalis; in renal dropsy it is contra-indicated if there be acute nephritis.

**Official Preparations.**—Infusum Scoparii and Succus Scoparii.

**Not Official.**—Sparteina, Sparteinæ Periodidum, Sparteinæ Sulphas.

Official in Fr. Supp. (Genêt à balais); U.S. (dried tops).

A fluid extract (1 in 1) is Official in U.S., dose, 20 to 40 minims = 1·9 to 2·4 c.c.

#### INFUSUM SCOPARII. INFUSION OF BROOM.

Broom Tops, dried and bruised, 2; boiling Distilled Water, 20; infuse fifteen minutes, and strain. (1 in 10)

**Dose.**—1 to 2 fl. oz. = 28·4 to 56·8 c.c.

It takes the place of Decoction of Broom, B.P. '85.

#### SUCCUS SCOPARII. JUICE OF BROOM.

To 3 of juice from bruised Fresh Broom Tops, add 1 of Alcohol (90 p.c.); after seven days, filter.

**Dose.**—1 to 2 fl. drm. = 3·6 to 7·1 c.c.

#### Not Official.

**SPARTEINA** ( $C_{15}H_{26}N_2$ , eq. 232·53).—A clear, colourless, oily liquid, heavier than Water, having an odour somewhat resembling Aniline, and an intensely bitter taste. On exposure to light and air it darkens in colour. It is a liquid alkaloid, obtained from Broom.

Practically insoluble in Water, soluble in Alcohol, in Ether, and in Chloroform.

**SPARTEINÆ PERIODIDUM** ( $C_{15}H_{26}N_2 \cdot 2HI \cdot I_3$ , eq. 864·03).—Small, bronze-green crystals, or bronze-green amorphous powder. Insoluble in Water, soluble in Alcohol (90 p.c.). It contains 43·7 p.c. of loosely-combined Iodine. A diuretic in combination with Iodine.

**Dose.**— $\frac{1}{2}$  to 4 grains = 0·032 to 0·26 grammes.

**SPARTEINÆ SULPHAS** ( $C_{15}H_{26}N_2 \cdot H_2SO_4 \cdot 5H_2O$ , eq. 419·27).—Colourless, prismatic crystals, or a white, crystalline powder. Soluble 2 in 1 of Water, 1 in 5 of Alcohol (90 p.c.).

**Medicinal Properties.**—Cardiac tonic and diuretic. Useful in mitral disease. It slows and strengthens the pulse. Its action is more rapid and less persistent than that of Digitalis.—*B.M.J.* '86, i. 1246; '88, i. 363; *L.* '87, ii. 203; *P.J.* (3) xvi. 543; *Pr.* li. 213;

as a preliminary to chloroform anaesthesia.—*B.M.J.E.* '94, ii. 48; *T.G.* '95, 40.

**Dose.**— $\frac{1}{4}$  to 2 grains = 0·016 to 0·13 grammes.

*Dutch Supp.* maximum single dose, 0·1 gramme; maximum daily dose, 0·5 gramme.

Official in Dutch Supp., Fr. Supp., Swiss and U.S.

**Hypodermic Lamels**  $\frac{1}{2}$  grain of Sparteine Sulphate in each.

**Oxysparteina** and **Oxysparteinæ Hydrochloridum** and **Sulphas** have been used in medicine, the dose being about the same as that of Sparteina.

### Not Official.

#### SCOPOLA.

The dried Rhizome of *Scopolia carniolica*, known also on the Continent as *Scopolia Atropoides*.

It contains Hyoscyamine, Scopolamine (amorphous Hyoscine), see p. 357, and Atroscine (crystalline Hyoscine).

**Medicinal Properties.**—It has the same properties as Belladonna and *Hyoscyamus*.

This drug has not 'taken' in British practice, but it is used on an immense scale in America for the preparation of what is termed 'Belladonna' plaster.

Action of Scopolamine Hydrochloride on the eye.—*Pr. liv.* 469; *T.G.* '93, 338, 781; '94, 423, 480, 625, 680; *B.M.J.* '94, ii. 497.

### Not Official.

#### SCUTELLARIA.

The Herb of *Scutellaria lateriflora*, commonly known as Mad-dog Skull-cap. **Official in U.S.**

**Scutellarin** is a dry, light, greenish-brown powder, not a pure, proximate principle. It may be prepared by precipitating a concentrated tincture with Water.

Has been used in neuralgic and convulsive affections, chorea, delirium tremens, and nervous exhaustion from fatigue or over-excitement.

**Dose.**—1 to 5 grains = 0·065 to 0·32 grammes.

A fluid extract (1 in 1) is also prepared, dose,  $\frac{1}{2}$  to 1 fl. drm. = 1·8 to 3·6 c.c.

#### SENEGÆ RADIX.

#### SENEGA ROOT.

The dried Root of *Polygala Senega*.

Senega Root contains Saponin, and will therefore emulsify Oils; it also contains Methyl Salicylate, and Swiss gives a test for its presence in the Ethereal Extract.

**Medicinal Properties.**—A stimulating expectorant, moderately diaphoretic and diuretic. Chiefly used in chronic bronchitis, combined with Ammonium Carbonate and Spirit of Chloroform.

**Official Preparations.**—Infusum Senegæ, Liquor Senegæ Concentratus, and Tinctura Senegæ.

**Not Official.**—Syrupus Senegæ.

**Official** in all the Foreign Pharmacopœias.

#### **INFUSUM SENEGÆ. INFUSION OF SENEGA.**

Senega Root, in No. 10 powder, 1; boiling Distilled Water, 20. Infuse half-an-hour, and strain. (1 in 20)

**Dose.**— $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 c.c.

#### **LIQUOR SENEGÆ CONCENTRATUS. CONCENTRATED SOLUTION OF SENEGA.**

A fluid extract (1 in 2) made with a mixture of two parts of Alcohol (20 p.c.) and one part of Alcohol (45 p.c.); by percolation.

**Dose.**— $\frac{1}{2}$  to 1 fl. drm. = 1·8 to 3·6 c.c.

#### **TINCTURA SENEGÆ. TINCTURE OF SENEGA.**

1 of Senega Root, percolated with Alcohol (60 p.c.), to yield 5.

Now 1 in 5 instead of 1 in 8.

**Dose.**— $\frac{1}{2}$  to 1 fl. drm. = 1·8 to 3·6 c.c.

Dutch Supp. has a solid extract; Swiss and U.S., fluid extract, 1 in 1.

**Not Official.**

**SYRUPUS SENEGÆ (U.S.).**—Fluid Extract of Senega, 160; Water of Ammonia, 4; Sugar, 600; Water to measure 1000.

## **SENNA.**

SENNA.

The British Pharmacopœia recognises two kinds; **Alexandrian Senna**, the dried Leaflets of *Cassia acutifolia*, and **East Indian Senna**, the dried Leaflets of *Cassia angustifolia*.

When Senna is ordered in an Official preparation either of the above may be used.

U.S. has also an Indian and Alexandrian Senna; Ger. an East Indian Senna.

The different kinds of Senna, freed from stalks, are of nearly equal medicinal value.

**Medicinal Properties.**—An efficient purgative in cases of occasional or habitual constipation.

**Prescribing Notes.**—*As it produces griping and nausea, it is given with aromatics, such as Fennel in Compound Liquorice Powder, and Oil of Coriander in Syrup of Senna.*

**Dose.**—10 to 30 grains = 0·65 to 2 grammes.

**Official Preparations.**—Confectio Sennæ, Infusum Sennæ, Liquor Sennæ Concentratus, Syrupus Sennæ, and Tinctura Sennæ Composita. Contained in Pulvis Glycyrrhizæ Compositus. The infusion is used in the preparation of Mistura Sennæ Composita.

**Not Official.**—Elixir Sennæ, Extractum Sennæ Leguminorum Liquidum, Extractum Sennæ Fructuum Fluidum and Acidum Catharticum.

**Official in all the Foreign Pharmacopœias.**

### SENNA ALEXANDRINA. ALEXANDRIAN SENNA.

The dried Leaflets of *Cassia acutifolia*.

**Official in Russ.**

### SENNA INDICA. EAST INDIAN SENNA. B.P. Syn.—TINNEVELLY SENNA.

The dried Leaflets of *Cassia angustifolia*. From plants cultivated in Southern India.

### CONFECTIO SENNÆ. CONFECTION OF SENNA. N.O. Syn.—LENITIVE ELECTUARY.

Senna, 7; Coriander Fruit, 3; Figs, 12; Tamarinds, 9; Cassia Pulp, 9; Prunes, 6; Extract of Liquorice, 1; Refined Sugar, 30. The Figs, Prunes, Tamarinds and Cassia Pulp are treated with Distilled Water and pulped through a sieve; when mixed with the other ingredients the yield should be 75, by weight. (1 in 11 nearly)

**Dose.**—60 to 120 grains = 4 to 8 grammes.

**Official in all the Foreign Pharmacopœias except Dan., Mex. and Swed., but differing in composition.**

### INFUSUM SENNÆ. INFUSION OF SENNA.

Senna, 2 oz.; Ginger, sliced,  $\frac{1}{6}$  oz. (55 grains); Distilled Water, boiling, 20 fl. oz. Infuse fifteen minutes, and strain. (1 in 10)

From 20 fl. oz. of Infusion only about 14 fl. oz. drain out.

**Dose.**— $\frac{1}{2}$  to 1 fl. oz. = 14·2 to 28·4 c.c.; as a draught, 2 fl. oz. = 56·8 c.c.

**LIQUOR SENNÆ CONCENTRATUS.** CONCENTRATED SOLUTION OF SENNA.

20 of Senna, treated by continuous percolation with Distilled Water to yield 16 of fluid, which is heated to 180° F. (82·2° C.) for 5 minutes, and cooled. To this is added a mixture of Alcohol (90 p.c.) 2, and Tincture of Ginger 2½. It should yield 20, by measure. (1 in 1)

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

**MISTURA SENNÆ COMPOSITA.** COMPOUND MIXTURE OF SENNA. *B.P.Syn.*—BLACK DRAUGHT.

Magnesium Sulphate, 5; Liquid Extract of Liquorice, 1; Compound Tincture of Cardamoms, 2; Aromatic Spirit of Ammonia, 1; Infusion of Senna, *q.s.* to yield 20.

(1 of Magnesium Sulphate in 4)

Tincture of Senna omitted, Compound Tincture of Cardamoms increased, and Aromatic Spirit of Ammonia added.

**Dose.**—As a draught, 1 to 2 fl. oz. = 28·4 to 56·8 c.c.

(U.S. *Infusum Sennæ Compositum*—Senna 6, Manna, 12, Magnesium Sulphate 12, Fennel 2, boiling Water 80, Water sufficient to measure 100 when cold.)

**SYRUPUS SENNÆ.** SYRUP OF SENNA.

50 oz. of Sugar is dissolved with the aid of heat in 40 fl. oz. of a liquid extract of Senna (1 in 1); and when cool, 10 minims of Oil of Coriander dissolved in 40 minims of Alcohol (90 p.c.) is added. It should yield 92 oz., by weight.

(1 in 1 $\frac{3}{4}$ )

Process entirely altered and more Oil of Coriander used.

**Dose.**— $\frac{1}{2}$  to 2 fl. dram. = 1·8 to 7·1 c.c.

**TINCTURA SENNÆ COMPOSITA.** COMPOUND TINCTURE OF SENNA.

Senna, 4; Raisins of commerce, freed from seeds, 2; Caraway Fruit,  $\frac{1}{2}$ ; Coriander Fruit,  $\frac{1}{2}$ ; Alcohol (45 p.c.), 20; by maceration.

Now 1 in 5 instead of 1 in 8.

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c., for repeated administration; for a single administration, 2 to 4 fl. dram. = 7·1 to 14·2 c.c.

Official in Belg., Fr., Mex. and Swiss, 1 in 5; Dutch Supp., 1 in 15; by weight.

Not Official.

**ELIXIR SENNÆ (B.P.C.).**—16 fl. oz. of a liquor obtained from 16 oz. of Alexandrian Senna by two macerations with a mixture of 4 of Alcohol (90 p.c.) and 12 Distilled Water, is heated with

12 oz. of Sugar to 200° F. (93·3° C.) for ten minutes. Mix Chloroform, 24 minims; Oil of Coriander, 2½ minims; Tincture of Capsicum, ½ fl. dram., and Alcohol (90 p.c.), 3 fl. dram. Add them to the Syrup, and make up if necessary to 24 fl. oz. with Alcohol (60 p.c.).

**Dose.**—1 to 3 fl. dram. = 3·6 to 10·6 c.c.

**EXTRACTUM SENNAE LEGUMINORUM LIQUIDUM (B.P.C.).**—20 fl. oz. of liquor obtained from 20 oz. of Senna Pods by two macerations with a mixture of 1 of Alcohol (90 p.c.) with 2 of Distilled Water. Heat to 200° F. (93·3° C.) for ten minutes, and when cold add if necessary more of the mixture to make 20; filter.

**Dose.**—1 fl. dram. = 3·6 c.c.

**EXTRACTUM SENNAE FRUCTUUM FLUIDUM.**—Exhaust Senna Pods with cold water and evaporate the resulting liquid *in vacuo*, so that 1 of Fluid Extract shall equal 1 of Senna Pods.

**ACIDUM CATHARTICUM.**—According to Stockman, Cathartic Acid is a coloured glucoside. In the free state it is easily decomposed. It acts locally as an irritant and hence as a purgative when introduced into the alimentary canal.—*P.J.* (3) xv. 751.

Bourgoin and Bouchut, in a lengthy investigation on Senna and Cathartic Acid, conclude, ‘As a general result of this enquiry it appears that the best preparation is the Infusion of Senna.’—*P.J.* (3) ii. 223.

## SERPENTARIÆ RHIZOMA.

### SERPENTARY RHIZOME.

The dried Rhizome and Roots of *Aristolochia Serpentaria*, *Virginian Snakeroot*, or of *Aristolochia reticulata*, *Texan* or *Red River Snakeroot*.

From the southern parts of North America.

Under the title of **Aristolochia** the dried Stem and Root of *Aristolochia indica* is Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

**Medicinal Properties.**—A bitter stomachic, given in dyspepsia associated with nervous depression.

**Dose.**—10 to 15 grains = 0·65 to 1 grammie.

**Official Preparations.**—Infusum Serpentariæ, Liquor Serpentariæ Concentratus, and Tinctura Serpentariæ. Used in the preparation of Tinctura Cinchonæ Composita.

**Official in Belg., Dan., Fr., Mex., Port., Span. and U.S.**

### INFUSUM SERPENTARIÆ. INFUSION OF SERPENTARY.

Serpentary Rhizome, in No. 10 powder, 1; boiling Distilled Water, 20. Infuse fifteen minutes, and strain.

Now 1 in 20 instead of 1 in 40, and time reduced.

**Dose.**—½ to 1 fl. oz. = 14·2 to 28·4 c.c.

**LIQUOR SERPENTARIAE CONCENTRATUS.** CONCENTRATED SOLUTION OF SERPENTARY.

A fluid extract (1 in 2) made with Alcohol (20 p.c.).

**Dose.**— $\frac{1}{2}$  to 2 fl. drm. = 1·8 to 7·1 c.c.

A corresponding preparation **Liquor Aristolochiae Concentratus** (1 in 2), dose 30 to 120 minims = 1·8 to 7·1 c.c., is Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

**TINCTURA SERPENTARIAE.** TINCTURE OF SERPENTARY.

1 Serpentary Rhizome, percolated with Alcohol (70 p.c.), to yield 5.

Now 1 in 5 instead of 1 in 8.

**Dose.**— $\frac{1}{2}$  to 1 fl. drm. = 1·8 to 3·6 c.c.

**Official in U.S.**, 1 in 10, also **Fluid Extract**.

A corresponding preparation **Tinctura Aristolochiae** (1 in 5), dose 30 to 60 minims = 1·8 to 3·6 c.c., is Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

**SEVUM PRÆPARATUM.**

## PREPARED SUET.

A very white, almost inodorous, fatty substance, having a bland taste and unctuous to the touch. It is insoluble in Water and almost so in Alcohol (90 p.c.); soluble in Ether and Petroleum Spirit. It is Officially described as the internal fat of the abdomen of the sheep, *Ovis Aries*, purified by melting and straining.

**Official Preparation.**—Used in the preparation of **Unguentum Hydrargyri**.

**Official in** all the Foreign Pharmacopeias except Dutch and Russ.; Fr., *Suif de Mouton*; Ital., *Grasso di Montone*; Mex., Port. and Span., *Sebo*.

Not Official.

**SIMABA CEDRON.**

The bruised Seeds have been used for snake-bites and hydrophobia.

A bitter, crystalline principle, **Cedrine**, has been isolated.

Not Official.

**SIMARUBA.**

## BITTER SIMARUBA, OR MOUNTAIN DAMSON.

The Root-bark of *Simaruba officinalis*, from the West Indies.

**Medicinal Properties.**—A bitter tonic. In large doses causes nausea ; is diaphoretic and diuretic. Principally used in the asthenic and chronic form of dysentery ; may be combined with Opium in epidemic dysentery, and in the advanced stages of diarrhoea.

**Dose.**—15 to 30 grains = 1 to 2 grammes.

**Official in Dutch, Fr., Mex., Port. and Span.**

## SINAPIS.

### MUSTARD.

The powdered and mixed dried ripe Seeds of *Brassica nigra* and *Brassica alba*.

The whole virtue of Mustard depends upon the fact that when mixed with Water Allyl Thiocarbimide (Volatile Oil of Mustard) is formed. This compound is produced by the action of Myrosin upon Myronic Acid in the same way in which the Emulsin and Amygdalin react in the formation of Volatile Oil of Bitter Almonds. Black Mustard contains Myrosin and a large excess of Myronic Acid, and so is in itself able to produce the Volatile Oil to some extent. White Mustard contains Myrosin but no Myronic Acid, and so can by itself produce none of the Volatile Oil. The best result is obtained by mixing the black and white variety in such proportions that the Myrosin and the Myronic Acid will balance each other.

**Medicinal Properties.**—A powerful stimulant and sialagogue. The powder is taken internally as a condiment; a tablespoonful in a tumblerful of warm Water acts as an emetic ; used externally as a rubefacient and counter-irritant in pneumonia, pleurisy, muscular rheumatism and neuralgia ; as a sitz-bath in amenorrhoea.

**Official Preparations.**—*Charta Sinapis*, Linimentum Sinapis, and *Oleum Sinapis Volatile*.

**Not Official.**—*Applicatio Sinapis*, *Infusum Sinapis*, and *Thiosinamin*.

**Official in all the Foreign Pharmacopœias.** Fr., Moutarde ; Ital., Senape Nera ; Mex. and Span., Mostaza ; Port., Mostarde.

## SINAPIS ALBÆ SEMINA. WHITE MUSTARD SEED.

The dried ripe Seeds of *Brassica alba*.

## SINAPIS NIGRÆ SEMINA. BLACK MUSTARD SEED.

The dried ripe Seeds of *Brassica nigra*.

**CHARTA SINAPIS.** MUSTARD PAPER.

Extract by Benzol the fixed Oil from a mixture of equal weights of bruised Black and White Mustard Seeds ; dry, and reduce to No. 60 powder ; mix 75 grains of it with 5 fl. drm. of Solution of India-rubber, and spread by means of a suitable brush over about 30 square inches of one side of a piece of cartridge paper. Allow it to dry by exposure to the air.

**Official in Belg.; Dutch; Norw.; Fr., Sinapismes en Feuilles; Dan., Ger., Hung. and Swed., Charta Sinapisata; Ital., Carta Senapata; Span., Papel Sinapico; Russ., Charta Sinapina; U.S.**

**LINIMENTUM SINAPIS.** LINIMENT OF MUSTARD.

Volatile Oil of Mustard,  $1\frac{1}{2}$  fl. drm.; Camphor, 120 grains; Castor Oil, 5 fl. drm.; Alcohol (90 p.c.), 4 fl. oz.

Now about 1 in 27 instead of 1 in 40, and Ethereal Extract of Mezereon omitted.

As the essential oil quickly disappears on keeping, it is better to keep the other ingredients ready mixed, and to add the Mustard Oil when required.

**Official in U.S. (similar to B.P.).**

**Spiritus Sinapis.**—Austr. and Hung., Oil 1, Spirit 50; Belg., Ger., Russ., Swed. and Swiss, Oil 1, Spirit 49; Mex. (Linimento de Mostaza Compuesto), 1 in 38; Span. (Alcohol de Mostaza), Oil 1, Spirit 50. All by weight.

**OLEUM SINAPIS VOLATILE.** VOLATILE OIL OF MUSTARD.

An almost colourless, or pale yellow, highly refractive, limpid, oily liquid, possessing a very characteristic, penetrating, pungent, and excessively irritating odour. It is distilled from Black Mustard Seeds after maceration with Water.

**Solubility.**—1 in 50 of Water; readily in Alcohol (90 p.c.) and Ether.

**Medicinal Properties.**—Applied to the skin, it produces almost instant vesication, but when diluted it forms a useful counter-irritant application.

**Official in all the Foreign Pharmacopæias except Fr.**

**Not Official.**

**APPLICATIO SINAPIS.**—Volatile Oil of Mustard, 4 minims; Eau de Cologne, 1 fl. oz. Mix.

A good application in acute catarrh of the middle ear; to be applied behind the ear by means of a brush or Absorbent Wool.

**INFUSUM SINAPIS.**—Mustard, 2 drm.; boiling Water, 4 fl. oz.; strain. It relieves obstinate hiccough.

**THIOSINAMIN** (Allyl-thio-carbamide).—White, glistening crystals, generally odourless, but sometimes possessing a faint, garlic odour; soluble 1 in 17 of Water, 1 in 2 of Alcohol (90 p.c.) and soluble in Ether. It has been found useful for softening scar tissues and the removal of fibrous tumours, and has also been used in the treatment of lupus.

Employed in the form of a 15 to 20 p.c. Alcoholic solution,  $\frac{1}{2}$  to 1 syringeful being injected between the scapulae; or as an 8 p.c. solution in Water containing 20 p.c. Glycerin, 20 minims being injected, in divided portions, in the neighbourhood of the growth.—*B.M.J.E.* '02, i. 91; '04, i. 75; *B.M.J.* '03, i. 656; *L.* '03, i. 785; *C.D.* '02, i. 538; *P.J.* '02, ii. 201.

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## SODIUM.

### SODIUM.

**Na**, eq. 22.88.

A light, soft metal, exhibiting a silvery metallic lustre when freshly cut, but which rapidly oxidises in contact with air. It decomposes Water, causing the evolution of Hydrogen. It should be preserved under mineral Naphtha in well-stoppered bottles.

The only direct Official preparation of Sodium is **Liquor Sodii Ethylatis**. See **SODII ETHYLATIS LIQUOR**, p. 583.

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Not Official.

## SODA CAUSTICA.

White, hygroscopic pencils, or sticks, possessing a crystalline structure, or as a white, crystalline, deliquescent powder, or in fused masses. It has a strong, corrosive action on the skin, and the dust from the powder is very irritating to the eyes and nose. Great care is necessary when handling it. It rapidly absorbs both moisture and carbonic acid from the air, and must on that account be kept in well-closed bottles or tins.

**Official** in Austr., Add., Belg., Fr., Ital., Jap., Mex., Port., Span. and U.S.

The **Solution** is Official in Belg., 30 p.c., Swed., 25 p.c., Fr., 29 p.c., Ger., 15 p.c., Hung., 32 p.c., Port., 30 p.c., Span., 30 p.c., Swiss, 30 p.c., U.S., about 5 p.c.

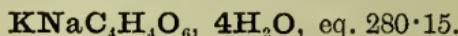
**Antidotes**.—Same as **Liquor Potassæ**, p. 500.

**Pasta Londinensis**.—Caustic Soda, Unslaked Lime, equal parts, reduced to a fine powder, and kept in a well-closed bottle. To be made into a paste with water when required.

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**SODA TARTARATA.****SODIUM POTASSIUM TARTRATE.**

*B.P.Syn.*—TARTARATED SODA; TARTRATE OF POTASSIUM AND SODIUM; ROCHELLE SALT. *N.O.Syn.*—TARTARUS NATRONATUS; SAL POLYCHRESTUM SEIGNETTE.



Colourless, translucent, rhombic prisms, or a white, odourless powder, having a saline taste. It is prepared by neutralising the acid radicle of Acid Potassium Tartrate with Sodium Carbonate and recrystallisation.

**Solubility.**—1 in  $1\frac{1}{2}$  of Water; soluble in its own water of crystallisation when hot; insoluble in Alcohol (90 p.c.).

**Medicinal Properties.**—A mild purgative, well suited for constipation associated with gout and hepatic dyspepsia. It is not aperient in small doses, its action then being diuretic, antilithic, and to render the urine alkaline.

**Dose.**—120 to 240 grains = 8 to 16 grammes.

**Official Preparation.**—Pulvis Soda Tartaratae Effervescens.

**Official in all the Foreign Pharmacopœias.**

**PULVIS SODÆ TARTARATÆ EFFERVESCENS.**

EFFERVESCENT TARTARATED SODA POWDER. Commonly known as Seidlitz Powder. *N.O.Syn.*—PULVIS AËROPHORUS LAXANS; PULVIS EFFERVESCENS LAXANS.

Sodium Potassium Tartrate, in dry powder, 120 grains; Sodium Bicarbonate, in dry powder, 40 grains. Mix. Wrap in blue paper. Tartaric Acid, in dry powder, 38 grains. Wrap in white paper.

**Dose.**—For a draught, the alkaline powder (in blue paper) is dissolved in nearly half a pint of cold or warm Water, and the acid powder (in white paper) then added.

The chief Continental Pharmacopœias have a simple Effervescent Powder, made with Sodium Bicarbonate and Tartaric Acid, and also a compound powder containing similar ingredients to the above.

**Official in all the Foreign Pharmacopœias except Dutch and Ital.**

**SODÆ CHLORINATÆ LIQUOR.****SOLUTION OF CHLORINATED SODA.**

A clear, colourless, pale yellow, or yellowish-green liquid, possessing a chlorinaceous odour and an alkaline reaction. It is prepared by triturating Chlorinated Lime 16, with Dis-

tilled Water 120, mixing with a solution of Sodium Carbonate 24, in Distilled Water 40, and filtering.

The solution contains Sodium Hypochlorite, Chloride and Carbonate. It should be preserved in a stoppered bottle in a cool and dark place.

Has the reputation of being an unstable solution, but this is an error. It undergoes but slight change, even when kept under ordinary conditions during several months, or even after keeping for a week in an open white glass bottle. It becomes yellow on keeping; but the 'Codex' preparation (the original Labarraque), prepared by mixing together the *unfiltered* solutions of one part of Chlorinated Lime with two parts of Soda crystals, remains colourless.

### Medicinal Properties.—See p. 159.

In the U.S. (1880) process of preparation, 80 parts of Chlorinated Lime containing 25 p.c. of Chlorine is directed to be treated once with Water before mixing with the hot Sodium Carbonate solution, whereas in the 1890 process 75 parts of Chlorinated Lime containing 35 p.c. of Chlorine is treated twice with Water and washed with a further quantity; the Sodium Carbonate solution is added hot, and in the event of gelatinisation the vessel warmed until the contents liquefy. An exhaustive comparison of the two processes led to the general conclusion that the latter, in the hands of the average operator, would not yield a product of the Official Chlorine strength. It leads to loss of Chlorine at every stage of the operation, not only by evaporation, but retention of Chloride in the Lime residue; though in the former process more Chlorine is retained in the Lime residue, the diminished loss by evaporation makes the finished product stronger than that yielded by the latter process, and altogether the former is the more sensible.—A.J.P. '04, 266.

Heat is not employed in the B.P. process.

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### Not Official.

### SODII ACETAS.

#### SODIUM ACETATE.



Colourless, translucent, mono-clinic prisms, or as a white, granular, crystalline powder, possessing a saline, bitter taste. The crystals are efflorescent in warm air, and should be kept in well-closed bottles in a cool place.

**Solubility.**—1 in 1 of Water; 1 in 30 of Alcohol (90 p.c.).

It has been employed as a diuretic in place of the Potassium salt, but is rarely used medicinally. Used in the preparation of Acetic Ether.

**Official in Belg., Dutch Supp., Fr., Ger., Hung., Ital., Jap., Mex., Russ., Span., Swed., Swiss and U.S.**

**SODII THEOBROMINÆ ACETAS** (Agurin).—A white, crystalline powder, possessing a somewhat bitter, saline taste. It is soluble in Water. Introduced as a new diuretic.

**Dose.**—3 to 8 grains = 0·2 to 0·52 grammes, given in form of a cachet, or a suspension with mucilage.

## SODII ARSENAS.

ARSENATE OF SODIUM (HYDROUS), *B.P.* '85.

The Anhydrous salt, Di-sodium Hydrogen Arsenate,  $\text{Na}_2\text{HAsO}_4$ , eq. 184·78.

An odourless, white, granular, amorphous powder, prepared by dehydrating the crystallised Di-sodium Hydrogen Arsenate, at a temperature of 143·9° C. (300° F.).

The crystallised salt occurs as colourless, odourless, translucent, prismatic crystals, with a slightly alkaline reaction, having the formula  $\text{Na}_2\text{HAsO}_4 \cdot 7\text{H}_2\text{O}$ , eq. 309·94. The *B.P.* title 'Arsenate of Sodium' (hydrous), *B.P.* '85, might very well have been omitted, as it is very misleading, and apt to give rise to serious error if the terms are taken to be synonymous. Some mention of the equivalents of the two salts might at least have been made under this heading 1 grain of the anhydrous salt = 1·67 grain of the crystallised ( $7\text{H}_2\text{O}$ ) salt; not 1·77 grains as given in the *B.P.* monograph on Liquor Sodii Arsenatis.

**Solubility.**—1 in 4 of Water.

**Medicinal Properties.**—Similar to those of Potassium Arsenite, or Fowler's Solution. Used in skin affections and nervous diseases. *See also ACIDUM ARSENIOSUM*, p. 10.

**Dose.**— $\frac{1}{40}$  to  $\frac{1}{10}$  grain = 0·0016 to 0·0065 grammes.

*Ital.* maximum single dose of the crystals ( $7\text{H}_2\text{O}$ ), 0·004 grammes; maximum daily dose, 0·015 grammes.

**Prescribing Notes.**—Generally employed in the form of the Liquor; may also be given in pills well triturated with Milk Sugar and 'Diluted Glucose,' q.s.

**Official Preparation.**—Liquor Sodii Arsenatis.

**Not Official.**—Pearson's Solution.

**Antidotes.**—*See ACIDUM ARSENIOSUM*, p. 10.

**Official** in Belg., dried salt; Dutch Supp., Fr., Ital., Mex., Port., Span., Swiss and U.S., crystallised; Ital., both.

## LIQUOR SODII ARSENATIS. SOLUTION OF SODIUM ARSENATE.

Sodium Arsenate, recently rendered anhydrous, 17½ grains; Distilled Water, q.s. to yield 4 fl. oz. (1 in 100)

After being made, this solution deposits a little Silica introduced in the preparation of the Arsenate, but, if filtered after a few days, remains clear.

It is about half the strength of Liquor Arsenicalis in Arsenic, as that preparation contains 1 p.c. of Arsenious Acid, and this 1 p.c. of Sodium Arsenate; another difference is that Liquor Arsenicalis contains an Arsenite, and this an Arsenate.

**Dose.**—2 to 8 minims = 0·12 to 0·5 grammes.

11 minims contain  $\frac{1}{10}$  grain of the anhydrous salt.

*Ph. Ger.* maximum single dose, 0·5 grammes; maximum daily dose, 1·5 grammes, of the Potassium Arsenite Solution.

**Official in U.S.**, same as Brit.; Belg., 1 in 1000; Fr. and Span., crystallised Sodium Arsenate 1 in 600; Dan., Port. and Swiss, 1 in 500; Ital. and Mex. have Solucion Arsenical de Pearson, 1 in 600.

**Solution Arsenicale de Pearson (Fr.).**—Crystallised Sodium Arsenate, 1; Water, 600, which is equal to 1 of the *anhydrous* salt in 1000, and therefore is only one-tenth the strength of B.P. solution.

## SODII BENZOAS.

SODIUM BENZOATE.

$C_6H_5COONa$ , eq. 143·01.

A white, amorphous powder, odourless, or having a faint odour of Benzoin when made from resin-sublimed Acid. It is obtained by neutralising Benzoic Acid with Sodium Carbonate.

**Solubility.**—1 in 2 of Water; 1 in 25 of Alcohol (90 p.c.).

**Medicinal Properties.**—Antiseptic and diuretic; similar in action to Benzoic Acid, but less irritating; given in chronic cystitis in which there is alkaline and decomposing urine. Given in rheumatism, gout, and in rheumatic arthritis.

College of Physicians recommended a solution of 120 grains in a quart of hot Water injected into the bowel in cases of Cholera; if in much pain, 15 to 30 minims of Laudanum may be added.—*L.* '92, ii. 683.

**Dose.**—5 to 30 grains = 0·32 to 2 grammes.

**Prescribing Notes.**—*May be given in cachets, but generally employed in solution.*

**Official in all the Foreign Pharmacopoeias except Dan., Ger., Norw. and Swed.**

## SODII BICARBONAS.

SODIUM BICARBONATE.

$NaHCO_3$ , eq. 83·43.

Small, opaque, prismatic crystals, or an odourless, white,

micro-crystalline powder, possessing a saline taste and alkaline reaction.

**Solubility.**—1 in 12 of Water; insoluble in Alcohol (90 p.c.).

**Medicinal Properties.**—Analogous to those of Potassium Bicarbonate; but it is much more frequently given, as it is only feebly depressant and is more slowly absorbed than the Potassium salt. Employed as a gastric sedative and as an antacid in dyspepsia. In the Uric Acid dia-thesis the corresponding salts of Potassium and Lithium are preferable, as they form more soluble salts with Uric Acid. It is very useful in diabetes. Moistened with Water, it is an excellent application to the sting of wasps and gnats.

Sodium salts accelerate the conversion of gelatinous Sodium Bi-urate into the crystalline variety, and their employment in the treatment of gout is apparently not desirable.—*L.* '00, i. 931; *B.M.J.* '00, i. 836.

5 cachets daily, each cachet containing 30 grains, increasing the dose if necessary, in the vomiting of pregnancy.—*Pr. lxvii. 244.*

Large doses (100 to 125 grains in 24 hours) in recurring vomiting of infancy.—*M.A.* '04, 379.

**Dose.**—5 to 30 grains = 0·32 to 2 grammes.

**Prescribing Notes.**—*May be prescribed in cachets, powders, or in solution. It is also given in Compressed Tablets.*

20 of *Sodium Bicarbonate* are neutralised by 16·7 of *Citric Acid*, and by 17·8 of *Tartaric Acid*.

**Official Preparation.**—*Trochiscus Sodii Bicarbonatis.* Used in the preparation of *Caffeinæ Citras Effervescens*, *Ferri Arsenas*, *Ferri Phosphas*, *Lithii Citras Effervescens*, *Magnesii Sulphas Effervescens*, *Pulvis Sodaæ Tartaratæ Effervescens*, *Sodii Citro-Tartras Effervescens*, *Sodii Phosphas Effervescens*, *Sodii Sulphas Effervescens*, *Spiritus Ætheris Compositus*, and ‘*Soluble Saccharin*.’

**Not Official.**—*Collunarium Alkalimum*, *Collunarium Alkalimum Co.*, and *Nebula Alkalina*.

**Official in all the Foreign Pharmacopœias.**

### **TROCHISCUS SODII BICARBONATIS.      SODIUM BICARBONATE LOZENGE.**

Contain 3 grains in each, with Rose basis.

**Dose.**—1 to 6 lozenges.

**Official in Austr., Belg., Dutch, Fr., Ital., Jap., Mex., Norw., Port., Russ., Span., Swiss and U.S.**

### **SODII CITRO-TARTRAS EFFERVESCENS.      EFFERVESCENT SODIUM CITRO-TARTRATE.**

Sodium Bicarbonate, 51; Tartaric Acid, 27; Citric Acid, 18; Refined Sugar, 15; all in powder; made into granules, the yield of which is about 100.

**Dose.**—60 to 120 grains = 4 to 8 grammes, as a mild, saline purgative.

**Not Official.**

**COLLUNARIUM ALKALINUM.**—Sodium Bicarbonate and Borax, of each 3 grains; Phenol, 1 grain; White Sugar, 5 grains; Water to 1 oz.—*Throat.*

**COLLUNARIUM ALKALINUM CO.**—Sodium Bicarbonate, Borax, Sodium Chloride, of each 2 grains; White Sugar, 5 grains; Water to 1 oz.—*Throat.*

**NEBULA ALKALINA.**—Sodium Bicarbonate, 15 grains; Borax, 15 grains; Carbolic Acid, 4 grains; Glycerin, 45 minims; Water to 1 oz.—*Throat.*

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## SODII BROMIDUM.

SODIUM BROMIDE.

**NaBr**, eq. 102·23.

Minute white crystals, or a white crystalline powder, possessing a saline, slightly bitter taste. It may be prepared in a similar manner to Potassium Bromide, employing Sodium Hydroxide in place of Potassium Hydroxide.

As this salt is very deliquescent it should be kept in well-stoppered bottles. It may be prepared either anhydrous, or containing 2H<sub>2</sub>O; commercial samples usually contain 98 to 99 p.c. of Bromide.

**Solubility.**—5 in 6 of Water, and measures 7½; 1 in 16 of Alcohol (90 p.c.).

**Medicinal Properties.**—Similar to Potassium Bromide, but less depressant and more easily tolerated by the stomach.

It has been recommended as a remedy for sea-sickness in 60-grain doses three times a day for at least two days before embarkation on a long voyage, the dose being reduced to half when on board.—*B.M.J.* '81, ii. 730.

Deprivation of salt and substitution of Bromide, about ½ oz. per week being taken in the treatment of epilepsy.—*B.M.J.* '03, i. 552.

A nightly draught containing 20 to 30 grains, together with a cachet containing 10 grains of Chloralamide, and followed by a second cachet containing 10 grains of Chloralamide if sleeplessness persists; in the treatment of insomnia accompanying the rapid heart of influenza.—*L.* '99, ii. 1079.

In the treatment of acute mania, 2 drachms in a half tumbler of Water every two hours until an ounce is given the first day, a

similar amount given on the second day, and this may suffice to effect the result desired, which is not at its height until the fourth or fifth day, ceasing the administration for 24 hours, when drowsiness is so profound that the patient cannot be roused, or if when roused talk is incoherent.—*B.M.J.* '00, i. 134.

Given in the treatment of the Morphine, Chloral and Cocaine habits: 30 grains twice daily, increasing the dose to 40, 50, 60, and even 120 grains if required.—*T.G.* '90, 600; 30 to 60 grains every three or four hours for a day or two.—*B.M.J.* '97, ii. 77; 120 grains in solution every two hours for the first two days, and 60 grains during the third day.—*B.M.J.* '99, i. 898.

**Dose.**—5 to 30 grains = 0·32 to 2 grammes.

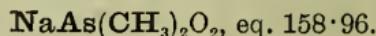
**Prescribing Notes.**—Generally given in solution; it may be prescribed in powders if carefully wrapped in tin foil. It is also given in Compressed Tablets.

**Official in Austr., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Norw., Russ., Span., Swed., Swiss and U.S.**

**Rubidium Bromide** in doses of 5 to 30 grains = 0·32 to 2 grammes; and **Rubidium Ammonium Bromide**, in doses of 10 to 40 grains have recently been introduced as substitutes for the alkaline bromides in the treatment of epilepsy.

#### Not Official.

#### SODII CACODYLAS.



White, odourless crystals, or as a white, amorphous, deliquescent powder.

**Solubility.**—2 in 1 of Water, 1 in 1 of Alcohol (90 p.c.).

It has been recommended on account of its lesser toxicity in all cases where Arsenic is usually employed, e.g. in tuberculous disease, anaemia, psoriasis and skin affections. It has also been used in the treatment of certain affections of the eye. When administered by the mouth in the form of pill or in solution it frequently imparts a disagreeable alliaceous odour to the breath, but when administered by hypodermic injection this objectionable feature is absent.

Professor Fraser has shown that when a salt of Cacodylic Acid is administered, it is absorbed and is eliminated, but the Arsenic it contains is so firmly combined that it does not become dissociated, and is therefore incapable of forming any compound in the body which can produce the well-known pharmacological activities of the usual therapeutic compounds of Arsenic. It has also been found by Crocker to be a failure in skin diseases.—*B.M.J.* '02, i. 712; '02, ii. 656; *L.* '02, i. 748; '03, i. 785.

General references.—*L.* '99, i. 1667; ii. 1408; '00, i. 736, 1037; '00, ii. 1446, 1923; '01, i. 1462; '02, i. 676; *B.M.J.* '00, ii. 1828;

'01, i. 120; *B.M.J.E.* '01, ii. 32, 48, 83; *P.J.* '97, i. 221; '99, ii. 135, 252; '00, ii. 724; '02, ii. 336, 697; *C.D.* '00, ii. 658; '01, i. 19; '01, ii. 949; '02, i. 59, 291, 466; *T.G.* '01, 790.

**INJECTIO SODII CACODYLATIS.**—A sterilised solution, containing  $\frac{3}{4}$  grain of pure Sodium Cacodylate in 15 minims. Also put up in glass capsules, each containing 1 c.c.

**Elixir Cacodylicus.**—An elixir, each fl. oz. of which contains  $\frac{3}{4}$  grain pure Sodium Cacodylate.

**Globules Cacodylicus.**—Globules containing  $\frac{1}{4}$  grain pure Sodium Cacodylate; also globules containing  $\frac{1}{8}$  grain.

**FERRI CACODYLAS** (Iron Cacodylate).—A yellow, or reddish-yellow, amorphous powder, soluble 1 in 15 of Water, insoluble in Alcohol (90 p.c.). It has been successfully employed in the treatment of anaemia.—*B.M.J.* '02, i. 713; *B.M.J.E.* '00, ii. 58; '02, ii. 87; *P.J.* '00, ii. 724; '03, i. 197.

**Dose.**— $\frac{3}{4}$  to 5 grains by the mouth. 15 minims = 1 c.c. of the undermentioned solution hypodermically.

**Injectio Ferri Cacodylatis.**—A sterilised solution containing  $\frac{3}{4}$  grain of Iron Cacodylate in 15 minims of solution. Also a double strength solution containing  $1\frac{1}{2}$  grains in 15 minims. Used with success in cases of anaemia.

**MAGNESII CACODYLAS** (Magnesium Cacodylate).—A white, amorphous powder, readily soluble in Water. It has been employed for the same purpose as the Sodium compound.—*P.J.* '02, i. 123.

**DI-SODII METHYLARSENAS** (Di-sodium Methylarsenate).—Colourless translucent crystals, or masses of crystals, or as a white granular powder. Soluble 1 in  $1\frac{1}{2}$  of Water, insoluble in Alcohol (90 p.c.). It has been introduced as a comparatively non-toxic preparation of Arsenic, and has been employed in the treatment of pulmonary tuberculosis, and in chlorosis and in anaemia. It has also been used in malarial cachexia.—*L.* '02, i. 623; *B.M.J.* '02, i. 804; *B.M.J.E.* '02, i. 68; *P.J.* '02, i. 253, 256, 282.

**Dose.**— $\frac{1}{2}$  to 1 grain = 0.03 to 0.06 grammes in solution, hypodermically, or in pill form.

Though containing much Arsenic, practically an inert substance, and even in enormous quantities it was incapable of producing the well-defined pharmacological action, and the well-recognised toxic effects of the Arsenic ion, and also incapable of exerting the remedial or therapeutic influences which were those of the older and commonly used compounds of Arsenic.—*B.M.J.* '03, i. 428; *L.* '03, i. 304.

Non-toxic effect of organic Arsenic compounds demonstrated by Bunsen sixty years ago.—*L.* '03, i. 474.

The salt is also known under the commercial names of **Arrhenal** and **Arsinyl**.

**Injectio Arsinyl.**—A sterilised solution containing  $\frac{1}{2}$  grain of the pure salt in 15 minims.

**Elixir Arsinyl.**—An elixir containing  $\frac{1}{2}$  grain of the pure salt in 1 fl. dram.

**Globules Arsinyl.**—Each globule contains  $\frac{1}{4}$  grain of the pure salt.

**ATOXYL** (Met-arsenic Acid Anilide) is a white, odourless, crystalline powder, soluble in Water. It has been used in dermatological practice. **Dose.**— $\frac{3}{4}$  to 3 grains = 0·05 to 0·2 grammes.—*B.M.J.E.* '02, i. 95; *Y.B.P.* '02, 162; *C.D.* '02, i. 735.

## SODII CARBONAS.

SODIUM CARBONATE.

$\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$ , eq. 284·11.

Colourless, translucent, efflorescent, monoclinic crystals, possessing a somewhat caustic taste and an alkaline reaction.

**Solubility.**—5 in 8 of Water at 60° F., and measures 11; 12 in 1 of Water at 100° F.; almost insoluble in Alcohol (90 p.c.).

**Medicinal Properties.**—Antacid; but it is so apt to irritate that the Bicarbonate is almost invariably preferred. Externally, as a lotion (30 grains to a pint) in eczema.

**Dose.**—5 to 30 grains = 0·32 to 2 grammes.

**Prescribing Notes.**—The Exsiccated salt may be given in the form of pills massed with 'Diluted Glucose.'

143 grains of the crystallised salt are equal to nearly 53 grains of the Exsiccated salt.

20 of Sodium Carbonate are neutralised by 9·8 of Citric Acid, and by 10·5 of Tartaric Acid.

**Official Preparation.**—Sodii Carbonas Exsiccatus used in the preparation of Extractum Ergotæ and many Sodium salts; also Liquor Magnesii Carbonatis and various Carbonates, etc. The Exsiccated Carbonate is used in the preparation of Pilula Ferri.

**Not Official.**—Balneum Alkalinum.

Official in all the Foreign Pharmacopœias.

**SODII CARBONAS EXSICCATUS.**  $\text{Na}_2\text{CO}_3$ , eq. 105·31.  
EXSICCATED SODIUM CARBONATE. DRIED CARBONATE OF SODIUM.—*B.P.* '85.

A white, amorphous, odourless powder, obtained by heating crystallised Sodium Carbonate until it loses 63 p.c. of its weight.

53 grains are equal to nearly 143 grains of crystallised salt.

**Dose.**—3 to 10 grains = 0·2 to 0·65 grammes.

Official in Austr., Belg., Dan., Fr., Ger., Hung., Russ., Swed. and U.S.

**Not Official.**

**BALNEUM ALKALINUM.**—Crystals of Sodium Carbonate, 8 or 10 oz. to 60 gallons of Water.

Used in skin diseases as a solvent to remove scabs and scaly incrustations.

**SODII CHLORIDUM.**

SODIUM CHLORIDE.

$\text{NaCl}$ , eq. 58.07.

White, cubical crystals, or a white, crystalline powder, possessing a strong, saline taste, and neutral reaction. It is prepared by purifying common salt.

**Solubility.**—1 in  $2\frac{3}{4}$  of Water; 1 in  $2\frac{3}{4}$  of boiling Water; 1 in 200 of Alcohol (90 p.c.).

**Medicinal Properties.**—In small doses, stimulant, restorative and tonic; in larger doses, purgative and emetic; in the form of enema, anthelmintic. It is an important article of diet. **Normal Saline Solution** has been employed to relieve those suffering from shock and from the effects of haemorrhage, and as an eliminant in septic and toxic conditions. Used in uræmia, eclampsia and cholera. Locally, as a fomentation to sprains and bruises. Salt water baths (1 lb. to 4 gallons) are tonic and stimulant to the system, specially in children, and are useful in chronic rheumatism and gout. Nasal injection of a saturated solution is useful in ozæna. A recent cold is greatly relieved by douching the nostrils and gargling the throat with a weak solution of Salt; gargling is also serviceable in tonsillitis and chronic throat catarrh. In case of a leech being swallowed a strong solution of Salt should be drunk; it is also a valuable antidote in poisoning by Silver Nitrate.

Its value as an article of diet is well known. Soldiers are supplied with it: our army, 0.5 oz. daily; the French, 0.5; Prussian, 0.87; Russian, 1.86; for a long time the Russian soldiers had salt-money given, and it was only when scurvy attacked them that the money was stopped and the salt given instead.

Irrigation of the urethra with hot saline solution in treatment of gonorrhœa.—*B.M.J.E.* '01, ii. 60.

Saline transfusion for prevention of shock during prolonged operations.—*B.M.J.* '01, ii. 1139.

Intravenous injection of normal saline solution in a severe case of hæmatemesis; recovery.—*B.M.J.* '02. i. 770.

Saline transfusion in the treatment of puerperal eclampsia,—

*L.* '01, i. 1682; *B.M.J.* '01, i. 510, 958, 1144; '03, i. 1023; '03, ii. 1332, 1378, 1408; *T.G.* '01, 616, 623.

General formulæ for saline solutions.—*Pr.* lxvii. 486; *P.J.* '99, ii. 141.

In pneumonia.—*B.M.J.* '00, ii. 900.

In the treatment of diabetic coma.—*B.M.J.* '03, i. 544.

**Dose.**—10 to 60 grains = 0·65 to 4 grammes, as a tonic; as an emetic,  $\frac{1}{2}$  to 1 oz. = 14·2 to 28·4 grammes.

**Official Preparation.**—Used in the preparation of Acidum Hydrochloricum, Hydrargyri Perchloridum, Hydrargyri Subchloridum, Sodii Bicarbonas, Sodii Carbonas and Sodii Sulphas.

**Not Official.**—Normal Saline Solution, Pulvis Salinus Anticholeraicus and Nebula Sodii Chloridi Composita.

**Official in Austr.** Add., Belg., Dan., Dutch, Fr., Ger., Ital., Jap., Mex., Port., Russ., Span., Swed., Swiss and U.S.

### Not Official.

**NORMAL SALINE SOLUTION.**—Sodium Chloride, 78·75 grains; Water to 20 fl. oz.

On the authority of Professor Stirling of Manchester, the percentage of Sodium Chloride in human blood is taken to be 0·9 p.c. The usual figure 0·6 p.c. is for cold-blooded animals, and was calculated on the blood of a frog.

**PULVIS SALINUS ANTICHOLOERAICUS** (*Stevens*).—Sodium Bicarbonate, 30 grains; Sodium Chloride, 20 grains; Potassium Chlorate, 7 grains: for one dose.

Given frequently in a small tumbler of Water in diarrhoea and cholera.

**NEBULA SODII CHLORIDI COMPOSITA.**—Sodium Chloride, 1; Sodium Bicarbonate, 1; Borax, 1.

1 teaspoonful to be dissolved in a pint of warm Water, and used as a spraying solution.—*University*.

### Not Official.

#### **SODII CINNAMAS.**

A white, granular, amorphous powder, having a faint Cinnamon-like odour, and a faintly alkaline reaction. Soluble 1 in 11 of Water; 1 in 160 of Alcohol (90 p.c.). It has been used in the treatment of pulmonary tuberculosis and in cancer, as an intramuscular or intravenous injection (15 to 30 minims of a 10 or 20 p.c. aqueous or Glycerin solution). In ophthalmic surgery it has been employed in the form of a 1 p.c. (7 to 8 minims) aqueous solution by subconjunctival injection.—*L.* '02, ii. 66, 67, 1755; *B.M.J.E.* '01, i. 67; '02, i. 28; *P.J.* '02, i. 550; *C.D.* '02, ii. 155; *P.J.* '02, i. 550.

In the treatment of tuberculosis, commencing with doses of

1 milligramme =  $\frac{1}{10}$  c.c. of a 1 p.c. solution, increasing the dose by  $\frac{1}{2}$  to 1 milligramme until 10, 15, or even 20 milligrammes are reached; the injections being given three times a week.—*B.M.J.E.* '04, i. 71.

**Dose.**—2 to 5 grains = 0·13 to 0·32 grammes.

It was introduced commercially as **Hetol**.

**Hetol-Caffeine** (Caffeine Sodium Cinnamate).—An amorphous, bitter powder; **Heto-cresol** (Meta-cresolic Ester of Cinnamic Acid) and **Hetoform** (Bismuth Cinnamate) are compounds which have received notice in medical literature.

**INJECTIO SODII CINNAMATIS.**—A sterilised 10 p.c. aqueous solution of Sodium Cinnamate.

**Dose.**—16 minims = 1 c.c. hypodermically.

Glycerin has been recommended as a solvent for Sodium Cinnamate. The solution can be readily sterilised, but a 10 p.c. solution though bright when first made soon crystallises out.

## SODII ETHYLATIS LIQUOR.

### SOLUTION OF SODIUM ETHYLATE.

A pale yellow, viscid, alcoholic liquid, sp. gr. 0·867, prepared by dissolving 22 grains of clean, bright, metallic Sodium in 1 fl. oz. of Absolute Alcohol, care being taken to keep the contents of the flask cool during the reaction. It is Officially described as a colourless liquid, but even when freshly prepared it scarcely answers this description, being usually of a pale straw-colour, and becoming yellowish-brown on keeping, and when traces of aldehyde are present in the Alcohol, the change of colour is more rapid and occurs to a much greater extent, producing a deep brown.

This solution should be recently prepared, and should be preserved in well-stoppered bottles of a dark actinic shade. It contains 18 p.c. of the solid substance,  $C_2H_5ONa$ .

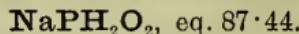
If the Sodium be not bright, it is advisable to wash it with a little Absolute Alcohol before commencing to make the Liquor.

**Medicinal Properties.**—Caustic; has been used in the treatment of *nævus*, nasal polypus, *ozœna* and *lupus*.—*L.* '78, ii. 625; '81, i. 168, 242; *B.M.J.* '85, ii. 344; '88, ii. 762.

It may be applied by means of a glass rod, camel's-hair brush, or a quill pen. Tincture of Opium may be added to relieve the pain, but not Chloroform, as it makes an explosive mixture.

**SODII HYPOPHOSPHIS.**

SODIUM HYPOPHOSPHITE.



Colourless, translucent, deliquescent, prismatic crystals, or as a white, granular powder, possessing a slightly bitterish, saline taste. It evolves, when heated, spontaneously inflammable Hydrogen Phosphide gas. It is obtained by the interaction of Sodium Carbonate and Calcium Hypophosphite.

Sodium Hypophosphite, when mixed with an equal quantity of Sodium Nitrate, forms a highly explosive mixture.—Y.B.P. '87, 21.

The crystals or powder deliquesce in very hot weather, but as soon as it cools (say to 65° F.) the salt dries up again.

**Solubility.**—1 in 1 of Water; 1 in 2 of Glycerin; almost entirely 1 in 20 of Alcohol (90 p.c.).

**Medicinal Properties.**—Similar to those of Calcii Hypophosphis.

**Dose.**—3 to 10 grains = 0·2 to 0·65 grammie.

**Not Official.**—Syrpus Sodii Hypophosphitis.

Official in Belg., Dutch, Fr., Ital., Mex., Port. and U.S.

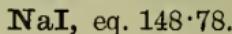
**Not Official.**

**SYRUPUS SODII HYPOPHOSPHITIS (B.P.C.).**—Dissolve 160 grains of Sodium Hypophosphite in 3 fl. dram. of Distilled Water, filter, and wash the filter with Distilled Water 1 fl. dram. To the filtered solution add sufficient Syrup to produce 20 fl. oz. Each fl. dram. contains 1 grain of Sodium Hypophosphite.

**Dose.**—1 to 4 fl. dram. = 3·6 to 14·2 c.c.

**SODII IODIDUM.**

SODIUM IODIDE.



Colourless, cubical crystals, or an odourless, white, crystalline, hygroscopic powder, possessing a somewhat bitter, saline taste. It is deliquescent in moist air, becoming partially decomposed; it should therefore be kept in well-closed bottles and in a cool place. It is Officially described as a “dry” powder, but commercial samples vary much in the proportion of water which they contain, from 10 to 20 p.c.

**Solubility.**—11 in 6 of Water, and measures  $10\frac{1}{2}$ ; 1 in 3 of Alcohol (90 p.c.); 1 in 1 of Glycerin.

**Medicinal Properties.**—Given in the same doses, and for similar purposes, as Potassium Iodide, and is more readily tolerated by the stomach.

5 to 10-grain doses for long continued administration, combined in the earlier stages with Ammonia, and in the later with from 3 to 5 minims of Fowler's solution, in the treatment of pain at the heart after influenza.—*L.* '99, ii. 1081.

**Dose.**—5 to 20 grains = 0·32 to 1·3 grammes.

**Official** in all the Foreign Pharmacopœias except Belg., Dan., Port. and Span.

**Not Official.**

Rubidium Iodide has been used for similar purposes to the Potassium Iodide.

**Dose.**—5 to 20 grains = 0·32 to 1·3 grammes.

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## SODII NITRIS.

SODIUM NITRITE.

$\text{NaNO}_2$ , eq. 68·58.

White, or yellowish-white, fused pencils or sticks, with a crystalline fracture; or a whitish, deliquescent crystalline powder, possessing a mild, saline taste, and an alkaline reaction.

It should be kept in well-stoppered bottles, and away from strong daylight.

It is prepared by fusing Sodium Nitrate with reducing substances such as metallic Lead, Barium Sulphide, etc., but if the reduction is carried too far, free alkali is formed and afterwards becomes carbonated.

**Solubility.**—5 in 6 of Water, 1 in 50 of Alcohol (90 p.c.).

**Medicinal Properties.**—Vaso-dilator and antispasmodic. Used with the object of warding off the attack in angina pectoris and asthma, as well as relieving the symptoms during an attack; also in migraine and hemicrania if accompanied by facial pallor. It is not so rapid in its action as Amyl Nitrite, but is more persistent and more gentle. It is of great service in lowering arterial tension in renal cirrhosis.

Closely approaches the action of Nitroglycerin, but without its objectionable features.—*Pr.* xxx. 179.

1 to 4-grain doses every three or four hours combined with Aromatic Spirit of Ammonia, and sometimes with  $\frac{1}{20}$  grain of Morphine Hydrochloride in angina pectoris.—*Pr.* lii. 348.

**Dose.**—1 to 2 grains = 0·06 to 0·13 grammes.

**Official Preparation.**—Used in the preparation of Liquor Ethyl Nitritis.

**Antidotes.**—Emetics, fresh air, recumbent position, Ergot, and Atropine.

**Official in U.S.**

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### Not Official.

**SODII OLEATIS SOLUTIO**, *see* p. 444.

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### **SODII ET POTASSII TARTRAS.**

*See* SODA TARTARATA, p. 572.

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### **SODII PHOSPHAS.**

SODIUM PHOSPHATE.

**Na<sub>2</sub>HPO<sub>4</sub>, 12H<sub>2</sub>O**, eq. 355·64.

Colourless, translucent, efflorescent, rhombic crystals, possessing a cooling saline taste and alkaline reaction. It is the Di-sodium Hydrogen Orthophosphate.

It should be kept in well-closed vessels in a cool place.

The exsiccated salt, **Sodii Phosphas Exsiccatus**, forms an odourless white powder, which is convenient for mixing with other powders. 1 of the dried salt equals about two of the crystalline.

It is liable to be contaminated with Arsenic : of course only Arsenic-free samples should be used in medicine.

**Solubility.**—1 in 6 of Water ; dissolves in its own water of crystallisation below 212° F. ; insoluble in Alcohol (90 p.c.).

**Medicinal Properties.**—A mild, saline purgative ; from its pure saline taste it is called Tasteless Aperient Salt, and is often given to children, Diuretic, antacid, and anti-lithic in small doses. As it renders the urine alkaline, it is sometimes useful in gout.

In the treatment of a case of diabetes mellitus, 20 grains given at first twice daily by the mouth, a solution being subsequently used hypodermically.—*B.M.J.* '03, i. 1205.

By hypodermic injection in various nervous diseases.—*B.M.J.E.* '98, ii. 108.

Incompatible with alkaloids.—*T.G.* '94, 334.

**Dose.**—30 to 120 grains = 2 to 8 grammes, for repeated administration ; for a single administration,  $\frac{1}{4}$  to  $\frac{1}{2}$  an oz. = 7·1 to 14·2 grammes.

**Official Preparation.**—Sodii Phosphas Effervescens. Used in the preparation of Ferri Phosphas.

**Official** in all the Foreign Pharmacopœias except Norw.

**SODII PHOSPHAS EFFERVESCENS. EFFERVESCENT SODIUM PHOSPHATE.**

Sodium Phosphate, in crystals, 50 ; Sodium Bicarbonate, in powder, 50 ; Tartaric Acid, in powder, 27 ; Citric Acid, in powder, 18 ; made into granules, the total weight of which is about 100.

**Dose.**—60 to 120 grains = 4 to 8 grammes, for repeated administration ; for a single administration,  $\frac{1}{4}$  to  $\frac{1}{2}$  an oz. = 7.1 to 14.2 grammes.

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**Not Official.**

**SODII PHOSPHAS ACIDUS.**

Large translucent rhombic crystals, readily soluble in Water. It has been given in case of alkaline urine.

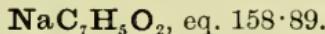
Results showing the power of the drug to increase the acidity of the urine.—*B.M.J.* '03, i. 1256 ; *L.* '03, i. 662.

**Dose.**—30 to 60 grains = 2 to 4 grammes every three hours, but it is better to give smaller quantities oftener to ensure continuous elimination.

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**SODII SALICYLAS.**

**SODIUM SALICYLATE.**



There are two Sodium Salicylates, the one prepared with the 'Natural' Acid, the other with the 'Artificial' Acid.

The former is in yellowish or pinkish-white pearly scales, or as a pinkish-white amorphous powder, possessing a sweetish saline taste, and frequently a faint odour of Methyl Salicylate ; the latter is in white lustrous pearly scales, or a white amorphous powder, with a sweetish saline taste. They may be obtained by the interaction of the respective Salicylic Acids and Sodium Carbonate or Sodium Hydroxide.

Both varieties should be kept in well-closed bottles of a dark actinic tint.

B.P. gives the formula with  $\frac{1}{2} \text{H}_2\text{O}$ , but it has been shown that crystallised Sodium Salicylate is anhydrous.

100 parts of Sodium Salicylate contain 86 parts of Acid Salicylic.

**Solubility.**—1 in 1 of Water ; 1 in 5 of Alcohol (90 p.c.) ; 1 in 30 of Absolute Alcohol.

**Medicinal Properties.**—Given as a specific in acute rheumatism; and as a powerful antipyretic in pneumonia, typhoid and all pyrexial affections. A soluble form of Salicylic Acid, and less irritating. Useful in influenza, chronic rheumatism, sciatica and in acute tonsillitis which is so often rheumatic in origin. The best antiseptic for fermentative dyspepsia. It increases the acidity of the urine. Brunton says that in obstinate constipation due to gout, its administration will tend to keep the bowels regular without any purgative whatever.

In some forms of diabetes. Combined with Potassium Bromide, in headache, *Pr.* lii. 101, *T.G.* '94, 335; in pleuritis, *T.G.* '94, 101; reason for advantage of natural over artificial Salicylate, *Pr.* lii. i. 447; of great value in psoriasis and in many forms of erythema, especially *e. nodosum*, *L.* '80, i. 627; '95, i. 1422; *B.M.J.* '86, i. 737; *T.G.* '85, 446. In exophthalmic goitre.—*B.M.J.E.* '95, i. 91.

As a means of diagnosis between rheumatism and gout; if the patient improved under Salicylate treatment the disease was rheumatic, if not it was gout.—*L.* '99, ii. 441.

Larger doses of the salt prepared from the 'natural' Acid could be given with less ill effects.—*L.* '00, i. 1016.

In pneumonia 8 to 10 grains given every two hours.—*Pr.* lxiv. 330.

Temporary blindness resulting from 140 to 150 grains taken over a period of sixty hours.—*B.M.J.* '01, ii. 81.

10 to 20 grains combined with 10 grains Quinine Sulphate every four hours in the treatment of malarial fever.—*L.* '03, ii. 95, 200, 631.

In the treatment of chorea 10 grain doses with 20 grains Sodium Bicarbonate for a child of 6 to 10 years; increasing the quantities to 15 and 30 grains respectively, after two or three days; and if necessary to 20 and 40 grains respectively after a further two or three days. A careful watch being kept for any symptoms of Salicylate poisoning.—*B.M.J.* '03, ii. 451.

**Dose.**—10 to 30 grains = 0·65 to 2 grammes.

**Prescribing Notes.**—Generally given in solution, may also be prescribed in cachets or powders. When dissolved with Water and mixed with Ammonia, the solution soon becomes yellow or brown on exposure to the air, which happens in mixtures containing the salt and Aromatic Spirit of Ammonia when the bottle is half full. It is sometimes prescribed with Citric Acid, which precipitates the Salicylic Acid. It is better to give it with Sodium or Potassium Citrate. When prescribed with a salt of Quinine, Quinine Salicylate is formed, which is only slightly soluble, and is therefore thrown out.

**Official Preparation.**—Used in the preparation of Bismuthi Salicylas.

Official in all the Foreign Pharmacopœias except Port.

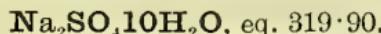
## Not Official.

**SODII DITHIÖ-SALICYLAS** (Dithion).—A yellowish-white, amorphous, somewhat hygroscopic powder, antiseptic and antipyretic. Used in the form of powder, solution or ointment. Has been found useful in the treatment of rheumatism.

**Dose.**—1 to 3 grains = 0·06 to 0·2 grammes.

**SODII SULPHAS.**

SODIUM SULPHATE.



Colourless, transparent efflorescent monoclinic prisms, having a bitter cooling saline taste.

**Sodii Sulphas Exsiccatus**, is an odourless white powder, 1 of which equals  $2\frac{1}{4}$  of the crystalline salt. Much more convenient than the crystals for mixing with other powders.

**Solubility.**—1 in 3 of Water, and measures  $3\frac{1}{2}$ ; 10 in 3 of Water at  $92^{\circ}\text{ F.}$ ; 10 in  $4\frac{1}{2}$  of Water at  $212^{\circ}\text{ F.}$ ; insoluble in Alcohol (90 p.c.).

**Medicinal Properties.**—Hydragogue purgative and cholagogue; useful in cases of gall-stones and of liver disease; in small repeated doses it is especially well adapted for cases of constipation associated with gout and hepatic dyspepsia.

**Dose.**—30 to 120 grains = 2 to 8 grammes, for repeated administration; for a single administration,  $\frac{1}{4}$  to  $\frac{1}{2}$  an ounce = 7·1 to 14·2 grammes.

**Official Preparation.**—Sodii Sulphas Effervescens.

**Not Official.**—Pulvis Sodii Sulphatis et Zingiberis, Pulvis Salis Carolini Factitii Effervescens, Sal Carolinum Factitium.

**Official in Austr. and Hung., Natrium Sulfuricum Crystallisatum**, also Siccum; Belg., Sulphas Sodæ; Dan., Dutch, Norw. and Swed., Sulphas Natricus; Dan. and Swed., also Siccatus; Dutch, also Exsiccatus; Fr., Sulfate de Soude Purifié; Ger. and Swiss, Natrium Sulphuricum, also Siccum; Ital., Solfato di Sodio; Jap., Natrium Sulfuricum; Mex., Sulfato de Sodio; Port., Sulfato de Soda; Russ., Natrium Sulfuricum, Depuratum, and Siccum; Span., Sulfato Sodico; U.S.

**SODII SULPHAS EFFERVESCENS. EFFERVESCENT SODIUM SULPHATE.**

Sodium Sulphate in crystals, 50; Sodium Bicarbonate in Powder, 50; Tartaric Acid in powder, 27; Citric Acid in powder, 18; made into granules, the total weight of which is about 100. (1 in 2)

**Dose.**—60 to 120 grains = 4 to 8 grammes, for repeated

administration; for a single administration,  $\frac{1}{4}$  to  $\frac{1}{2}$  an ounce = 7.1 to 14.2 grammes.

**Not Official.**

**PULVIS SODII SULPHATIS ET ZINGIBERIS.**—Sodium Sulphate, in powder, 60 grains; Ginger, in Powder, 5 grains; mix.

To be taken in a small tumbler of warm Water, in the morning.

**PULVIS SALIS CAROLINI FACTITII EFFERVESCENS** (Effervescent Powder of Carlsbad Salt) (*B.P.C.*).—Dried Sodium Sulphate, 11 oz.; Powdered Potassium Sulphate,  $\frac{1}{2}$  oz.; Sodium Chloride, 4 $\frac{1}{2}$  oz.; Sodium Bicarbonate, 54 oz.; Tartaric Acid, 40 oz.; Glucose, 28 grains. Dry separately, reduce to fine powder and mix.

**Dose.**—60 to 120 grains = 4 to 8 grammes.

**SAL CAROLINUM FACTITIUM** (*Ger.*).—Dry Sodium Sulphate, 22; Potassium Sulphate, 1; Sodium Chloride, 9; Sodium Bicarbonate, 18.

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## SODII SULPHIS.

### SODIUM SULPHITE.



Colourless, transparent efflorescent monoclinic prisms having a cooling saline and sulphurous taste. It can be obtained by interaction of Sulphurous Acid and Sodium Carbonate.

It should be preserved in well-closed bottles and kept in a cool place, as both the crystals and aqueous solutions are liable to oxidation on exposure to air.

**Solubility.**—3 in 4 of Water; insoluble in Alcohol (90 p.c.); 1 in 25 of Glycerin.

**Medicinal Properties.**—Antiseptic; given with success in fermentative vomiting and dilated stomach due to sarcina ventriculi. Externally as a lotion in parasitic cutaneous affections.

**Dose.**—5 to 20 grains = 0.32 to 1.3 gramme.

**Not Official.**—Liquor Sodii Sulphitis Benzoicus, Sodium Thiosulphate and Lotio Sodii Hyposulphitis.

**Official in Mex., Port. and U.S.**

**Not Official.**

**LIQUOR SODII SULPHITIS BENZOICUS.**—Sodium Sulphite, 30; Benzoic Acid, 14; Water 500. An Antiseptic solution, recommended by Heckel.

**SODIUM THIOSULPHATE** (Sodium Hyposulphite  $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$ , eq. 246.44).—Colourless transparent monoclinic prisms, possessing a cooling and somewhat bitter sulphurous taste. Soluble 5 in 3 of Water; insoluble in Alcohol (90 p.c.). It is seldom used internally as a medicinal agent, but on account of its poisonous

influence on the sarcina ventriculi which attends yeasty vomiting it has been employed in that complaint. Externally in the form of a 12½ p.c. solution it has been used in parasitic diseases. It is used for removal of stains produced by silver salts and in volumetric analysis.

**Dose.**—5 to 10 grains = 0·32 to 0·65 grammes.

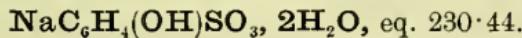
**Official in Dutch Supp. and Ger.**

**Lotio Sodii Hyposulphitis.**—Sodium Hyposulphite, 1 drm.; Water to 1 fl. oz.—*St. John's.*

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## SODII SULPHOCARBOLAS.

SODIUM SULPHOCARBOLATE.



Colourless, translucent, slightly efflorescent rhombic crystals, possessing at first a saline and then a somewhat bitter taste. It may be obtained by dissolving Phenol in excess of Sulphuric Acid, and converting the Para-phenol-sulphonic Acid so obtained into a Sodium salt.

It should be kept in well-stoppered glass bottles.

The Sulphocarbonates used in Medicine are defined as the salts of Para-phenol-sulphonic Acid. The action of Sulphuric Acid upon Carbolic Acid results in a mixture of Para- and Ortho-phenol-sulphonic Acids, the proportion of the latter being less the higher the temperature, and the longer continued the contact. To eliminate the Ortho salt further purification is necessary.

**Solubility.**—1 in 6 of Water; 1 in 150 of Alcohol (90 p.c.); 1 in 5½ of Glycerin.

**Medicinal Properties.**—Antiseptic and antipyretic; given in cases of flatulence, fermentative dyspepsia, and other conditions in which Carbolic Acid is used.

**Dose.**—3 to 15 grains = 0·2 to 1 grammes.

**Official in Dutch Supp. and U.S.**

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Not Official.

## SODII SULPHOVINAS.

SODIUM SULPHETHYLATE.

Translucent, hexagonal crystals, or as a white, granular powder; very hygroscopic, and should be kept in well-stoppered bottles. It is soluble in Water, in dilute Alcohol and in Glycerin. Used as a mild aperient.

**Dose.**—½ to 1 oz. = 14·2 to 28·4 grammes.

**Official in Fr.**

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Not Official.

### SODII TAUROCHOLAS.

A yellow or yellowish-brown, amorphous, granular, hygroscopic powder; or a brown or blackish-brown sticky resinous mass. Soluble 2 in 1 of Water, partially soluble in Alcohol (90 p.c.). It is best prepared from Pig's-bile.

It should be kept in well-closed bottles and in a cool place.

Has been given in the treatment of gouty obesity and dyspepsia, in doses of 4 grains at each meal immediately after food. The pills should be coated with Keratin.

**Dose.**—2 to 6 grains = 0·13 to 0·4 grammes made into pill with Alcohol (60 p.c.).

**Acidum Taurocholicum** (Taurocholic Acid) forms deliquescent silky needles readily soluble in Water and in Alcohol (90 p.c.).

**Sodii Glycocholas** occurs together with the above salt in ox-bile. It may be obtained in the form of stellate needles. It is given in gouty obesity and dyspepsia, and has been found to possess considerable cholagogue action.

**Dose.**—2 to 10 grains = 0·13 to 0·65 grammes.

Not Official.

### SODII VANADAS.

White or yellowish-white, odourless, granular powder, soluble 2 in 1 of Water; insoluble in Alcohol (90 p.c.).

It is stated to stimulate the gastric mucosa, increase the appetite and improve the general condition.—*B.M.J.E.* '01, ii. 88; *C.D.* '02, i. 638.

**Dose.**— $\frac{1}{64}$  to  $\frac{1}{25}$  grain = 0·001 to 0·0027 grammes.

**Iron Meta-vanadate**, a dark, greyish-brown powder, insoluble in Water and in Alcohol (90 p.c.); and **Lithium Meta-vanadate**, a yellowish-white crystalline powder, soluble in Water, have also been prepared.

### SOLUBILITY.

The several paragraphs appearing under this title are probably of more use to the Prescriber and Dispenser than any others which appear in a book of this kind; the prescriber is constantly wishing to know whether a given substance will dissolve in some liquid which he desires to use, and to what extent. It is obvious that an error, stating the substance to be more soluble than it really is, causes more trouble and dissatisfaction than an error in the opposite direction, but the figures should at least be approximately correct.

Figures for the solubility of the various substances have been given in the *Companion* since its first issue in 1864, and

these have been revised and supplemented from time to time in subsequent editions, from experiments made for that purpose. In most instances the figures have been ascertained by adding the solid substance in fine powder to a liquid, and shaking it at intervals during three days at a temperature between 58° and 62° F. (14·4° and 16·6° C.). They represent the weight of a solid in grammes, and the measure of a fluid in cubic centimetres. Some liquids are stated to be miscible in all proportions; this has been ascertained by adding to 5 c.c. of one fluid, small quantities of the other fluid,  $\frac{1}{10}$  c.c. at first, and afterwards  $\frac{1}{2}$  c.c. until 20 c.c. have been added, shaking the mixture after each addition, the temperature of the mixture being kept inside the limits given above.

At the instance of the Pharmacopœia Committee of the General Medical Council, a large number of experiments in the Research Laboratory of the Pharmaceutical Society were made with a view to determining the accuracy or otherwise of the solubilities of chemicals mentioned in the British Pharmacopœia, and the results were fully reported and a comparison made with authoritative statements.—*P.J.* '00, ii. 190; '01, i. 774, 806; '02, i. 510, 532, 551.

A critical comparison of the figures given in the above papers, with those recorded in the *Companion* showed, with two exceptions, a very close agreement, and in both of these cases the *Companion* figure was shown to be correct.—*C.D.* '02, ii. 944; *P.J.* '03, i. 65; *Y.B.P.* '03, 304.

The concluding report, from the Research Laboratory, on the solubility of chemical substances mentioned in the British Pharmacopœia.—*P.J.* '03, ii. 881, 945.

In the Continental Pharmacopœias solubility figures are usually expressed in parts by weight, and this fact is frequently overlooked when quoting such figures; in the case of liquids, lighter or heavier than water, the difference may be considerable.

For instance, in a communication from the Research Laboratory (*P.J.* '03, ii. 946), 'a comparison with authoritative statements' shows an apparent discrepancy between the figures given in the British and German Pharmacopœias for the solubility of Phenacetin in Alcohol (90 p.c.), 1 in 20 and 1 in 16 respectively, whereas the British, being given by volume and the German by weight, the figures are in perfect accord.

### Not Official.

### SOMATOSE.

A light white or greyish powder, stated to be prepared from fresh meat; soluble in Water, and consisting of a mixture of deutero- and hetero-albumoses.

Denaeyer states that it is neither albumose nor a peptone, but

has the characters of an alkali-albumen. This statement is partially confirmed by Allen.

A true meat nutrient possessing restorative and stimulating powers, being well borne by delicate patients. Has a favourable effect on general metabolism. Produces no irritant effect on the kidneys and it never gives rise to albuminuria, albumosuria or peptonuria.—*L.* '99, ii. 885.

Given in small doses of 12 grains has been found useful in secondary syphilis, and in the anaemia caused by malaria.—*B.M.J.E.* '99, i. 16.

Recommended in anaemia, in intestinal disorders, and in dyspepsia.

**Liquid Somatose** is given in teaspoonful doses to adults.

**Iron Somatose**.—Is a light brown almost tasteless powder, soluble in aqueous liquids. It contains 2 p.c. of Iron, and has been recommended in the treatment of chlorosis. **Milk Somatose** has also been introduced.

#### Not Official.

#### SOZOIODOL.

#### DI-IODOPARAPHENOLSULPHONIC ACID.

A white, shining, crystalline powder, containing Iodine about 52 p.c., Carbolic Acid 20 p.c., and Sulphur 7 p.c., preferably used in the form of its salts. When required in solution, the Sodium salt is most applicable, dissolving 1 in 14 of Water or Glycerin. The Potassium salt, soluble 1 in 100 of Water, is preferable as a dusting powder, or in ointments. Solution of the Zinc salt, 1 to 3 p.c., is suitable for injection.

**Medicinal Properties**.—Introduced as a substitute for Iodoform.

It is recommended locally in nasal and pharyngeal disorders, and as an application of great energy in parasitic skin affections.—*B.M.J.* '89, ii. 42; *T.G.* '89, 132; '91, 592. In aural and nasal affections.—*L.* '94, i. 1636; *B.M.J.E.* '94, i. 99.

**Sozoiodol cotton** and gauze containing 5 and 10 p.c.

**HYDRARGYRI SOZOIODOLAS** (Mercury Sozoiodol).—A fine, orange-yellow, amorphous powder, almost insoluble in Water, insoluble in Alcohol (90 p.c.).

Has been employed in the treatment of syphilis and in psoriasis, chiefly by hypodermic injection (*see below*).

The injections of this salt are stated to be less painful than those of Mercuric Chloride.—*L.* '01, ii. 522; '03, i. 785; *B.M.J.* '03, i. 656.

**Official in the Dutch Supp.**

**INJECTIO HYDRARGYRI SOZOIODOLATIS HYPODERMICA.**—Mercury Sozoiodol, 5 grains; Sodium Iodide, 10 grains; Distilled Water, 200 minims. Inject 10 to 15 minims = 0·6 to 0·88 c.c.—*Lock.*

Not Official.

### SPERMIN.

#### DR. BROWN-SEQUARD'S ORCHITIC FLUID.

Full details regarding its preparation and uses are published *B.M.J.* '93, i. 1145, 1212, with an editorial article p. 1279; *B.M.J.E.* '94, ii. 52, 56; *T.G.* '93, 110.

Some experiments, at the Hospital for the Paralysed and Epileptic.—*L.* '94, i. 263.

In ataxia, epilepsy and mental disease.—*B.M.J.E.* '93, ii. 108.

In the form of an essence, 20 drops taken three times a day, in the treatment of abnormalities of frequency and rhythm of the pulse.—*B.M.J.E.* '02, i. 23; *L.* '02, i. 326.

### SPIRITUS.

#### SPIRIT.

All saccharine substances which have undergone the vinous fermentation, contain Alcohol, which can be separated by distillation. The various kinds of alcoholic liquids are distinguished by differences in flavour and colour.

When Alcohol is distilled with aromatic substances containing volatile oil, part of the oil is carried over by the alcoholic vapour, and condenses along with it.

All the Official Spirits, except Brandy, are prepared with Alcohol (90 p.c.).

### SPIRITUS AETHERIS NITROSI.

#### SPIRIT OF NITROUS ETHER.

*B.P.Syn.*—SWEET SPIRIT OF NITRE.

A transparent pale yellow, or greenish-yellow, mobile, volatile and inflammable liquid, sp. gr. 0·838 to 0·842. It should be kept in well-stoppered bottles of a dark actinic tint, and in a cool place.

It is an alcoholic solution of Ethyl Nitrite, containing aldehyde and other substances, and is Officially required to yield, when freshly prepared, at least  $6\frac{1}{4}$ , but not more than 7 volumes of Nitric Oxide gas, corresponding to at least  $2\frac{1}{2}$  p.c. by weight of Ethyl Nitrite, and even after keeping for some time, not much less than 5 volumes, corresponding to not less than 1·75 p.c.

**Medicinal Properties.**—Stimulant, diaphoretic, diuretic and antipyretic. Useful in dropsy of renal origin,

but is contra-indicated in acute nephritis. Being a nitrite it is sometimes used in asthma, angina pectoris and dysmenorrhœa. See also Medicinal Properties of Liquor Ammonii Acetatis.

**Dose.**—20 to 40 minims = 1·2 to 2·4 c.c., for repeated administration; for a single administration, 60 to 90 minims = 3·6 to 5·4 c.c.

**Incompatibles.**—Potassium Iodide, Ferrous Sulphate, Tincture of Guaiacum, Gallic and Tannic Acids, Antipyrine, and Salicylates.

**Prescribing Notes.**—When prescribed with Potassium Iodide, separation of Iodine may be prevented by neutralising the free acid in Spiritus Ætheris Nitrosi with Potassium or Sodium Bicarbonate, or the Carbonates. The incompatibility of Antipyrine and Spiritus Ætheris Nitrosi may be overcome by prescribing them in alkaline solution.

The measure of gas evolved on the addition of Potassium Iodide solution is a measure of the acidity of the Spiritus Ætheris Nitrosi under examination. It should not amount to much more than a third of the total gas volume registered.

**Official in** Belg., Dutch, Fr., Ger., Ital., Jap., Norw., Mex., Port., Russ., Span., Swed., Swiss and U.S.

Under the name of 'Itrosyl' a concentrated form of Nitrous Ether has been introduced, 1 fl. oz. of which mixed with 19 fl. oz. of Alcohol (90 p.c.) is stated to be equivalent to Spiritus Ætheris Nitrosi.

#### LIQUOR ETHYL NITRITIS. SOLUTION OF ETHYL NITRITE.

A transparent, colourless, or pale yellow, mobile, volatile, inflammable liquid. Sp. gr. 0·823 to 0·826. It consists of a mixture of 95 parts by volume of Absolute Alcohol with 5 parts by volume of Glycerin, and contains, when freshly made, 3 p.c. by weight, and even after keeping for some time not less than 2½ p.c. by weight of Ethyl Nitrite.

The reasons for its introduction will be found, P.J. (3) xviii 861.

**Medicinal Properties.**—Similar to those of the other more slowly acting Nitrites.

**Dose.**—20 to 60 minims = 1·2 to 3·6 c.c.

Experiments testing the physiological activity of the B.I preparation compared with a 2·5 p.c. solution of the pure Ethyl Nitrite showed that both were practically identical.

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Not Official.

## SPIRITUS FRUMENTI.

### WHISKY.

An alcoholic liquid obtained from fermented grain by distillation, and containing about 51 p.c. by volume of Alcohol.

Allen states: 'In the majority of cases a judicious admixture of raw and malted grain is employed. Other things being equal, the Spirit from malted grain is the most valuable, and contains least Fusel Oil. Whisky improves greatly on keeping.'

'As the Amyl Alcohol in Spirits rarely exceeds 0·1 p.c., or 70 grains per proof gallon, it seems highly improbable that it can produce the local effects sometimes attributed to it. Its effect on the general system has probably been greatly exaggerated.'

'When new it is colourless, or nearly so; but by storing in sherry casks (a favourite mode of imparting flavour to Whisky) it acquires colour, and then contains sensible traces of Tannin, Sugar, etc. The smoky flavour of Irish Whisky is due to the fact that the malt used has been dried upon kilns in which peat is used for fuel, but is often imitated by adding one or two drops of Creosote to the gallon of Spirit. It is very doubtful whether Fusel Oil is ever purposely added to Whisky, but it is almost invariably present in greater or less quantity, and is the cause of the objectionable symptoms produced by new spirit.'

The following characters and tests are given in U.S.

Sp. gr. not above 0·930 nor below 0·917. It should not be less than two years old. It has an amber colour, a distinctive odour and taste. It should be free from more than traces of Fusel Oil, from grain or potato spirit, and from an undue amount of solids. It should not contain added Sugar, Glycerin, or Spices, or an undue amount of free acid.

Attention called to the fact that whereas years ago 70 p.c. was malt whisky and 30 p.c. grain or patent spirit, the proportions are now reversed.—*B.M.J.* '03, ii. 1645.

Injurious constituents and their relation to flavour; since the Aldehyde and Furfurol do not seem necessary for the production of Whisky, they are, from the point of view of public health, better removed from it.—*L.* '00, ii. 1643; '02, i. 1594.

Not Official.

## SPIRITUS METHYLATUS.

### METHYLATED SPIRIT.

The duty-free Spirit supplied to 'manufacturers' under a special bond, is a mixture of 9 parts of Alcohol with 1 part of a Wood Naphtha, approved by the Excise. It can also be supplied under a special bond for scientific purposes.

As supplied to 'licensed retailers' Methylated Spirit is three

pints of Petroleum Oil added to 100 gallons of the mixture described above. The Petroleum Oil is added, partly to make it more nauseous for drinking, and partly to facilitate its recognition. It becomes turbid when mixed with Water, which quality renders it unsuitable for many purposes to which duty-free Spirit has been applied.

Licensed retailers of Methylated Spirit must not sell more than 1 gallon at any one time, and may not keep stock exceeding 50 gallons. They may not sell Methylated Spirit between the hours of 10 p.m. on Saturdays and 8 a.m. on Mondays.

## SPIRITUS RECTIFICATUS.

ALCOHOL (90 p.c.).

*B.P. Syn.—RECTIFIED SPIRIT.*

A transparent, colourless, mobile, volatile and inflammable liquid, having a characteristic spirituous odour and burning taste. Sp. gr. 0·8340.

Officially described as a liquid containing 90 parts by volume of Ethyl Hydroxide,  $C_2H_5OH$ , eq. 45·7, and 10 parts by volume of Water ; obtained by the distillation of fermented Saccharine liquids.

On mixing Alcohol (90 p.c.) and Water, contraction of volume and rise of temperature occur. When such a mixture is prescribed in the British Pharmacopœia, the cooled liquid should be employed.

It is possible to rectify Alcohol up to 98 p.c., and 95 p.c. is prepared commercially in large quantities.

It may here be noted that although it is illegal for Chemists and Druggists to sell Rectified Alcohol except upon prescription, the Board of Inland Revenue do not appear to interfere with its sale by them in small quantities not exceeding 8 ounces at a time, for the purposes of medical or scientific research.

Alcohol (90 p.c.) dissolves Camphor, Balsams, Castor Oil, Iodine, Potassium and Sodium Hydroxides, but not the Carbonates.

**Medicinal Properties.**—Internally a powerful diffusible stimulant especially cardiac ; mildly antipyretic, diuretic, and diaphoretic. Used in some states of acute disease characterised by excessive debility, as in typhoid, acute pneumonia and influenza ; in chronic wasting diseases as phthisis ; in insomnia of old people ; as an aid to digestion, more especially in the aged and feeble and in those exhausted by overwork ; in sudden fainting and during convalescence from acute disease. In moderation it acts as a food, and saves tissue waste. Externally to prevent bed-sore and cracked nipples by hardening and disinfecting the skin ; it is

antiseptic and astringent, and is applied diluted to stop sweating and to produce cold by evaporation; 1 of Alcohol (90 p.c.) and two of Camphor Water mixed, is a good evaporating lotion. Diluted, it forms a lotion for erysipelas, erythema, burns and scalds while the cuticle is entire, and for sprains and recent bruises. As an ingredient of liniments it is rubefacient, it relieves rheumatic and other kinds of pain, and aids the resorption of inflammatory products.

**Official in all the Foreign Pharmacopœias.**

### DILUTED ALCOHOL.

Four strengths of Diluted Alcohol are Official containing respectively, 70, 60, 45 and 20 p.c. of Ethyl Hydroxide by volume. They may be prepared as described in the following paragraphs.

1. **Alcohol (70 p.c.).**—With 100 fl. oz. of Alcohol (90 p.c.), mix 31 (more accurately 31·05) fl. oz. of Distilled Water. Or, with 1000 c.c. of Alcohol (90 p.c.) mix 310·5 c.c. of Distilled Water. Sp. gr. 0·8900.

2. **Alcohol (60 p.c.).**—With 100 fl. oz. of Alcohol (90 p.c.) mix 53 $\frac{2}{3}$  (more accurately 53·65) fl. oz. of Distilled Water. Or, with 1000 c.c. of Alcohol (90 p.c.) mix 536·5 c.c. of Distilled Water. Sp. gr. 0·9135.

3. **Alcohol (45 p.c.).**—With 100 fl. oz. of Alcohol (90 p.c.) mix 105 $\frac{1}{2}$  (more accurately 105·34) fl. oz. of Distilled Water. Or, with 1000 c.c. of Alcohol (90 p.c.) mix 1053 $\frac{1}{2}$  (more accurately 1053·4) c.c. of Distilled Water. Sp. gr. 0·9436.

4. **Alcohol (20 p.c.).**—With 100 fl. oz. of Alcohol (90 p.c.) mix 355 $\frac{3}{4}$  (more accurately 355·8) fl. oz. of Distilled Water. Or, with 1000 c.c. of Alcohol (90 p.c.) mix 3558 c.c. of Distilled Water. Sp. gr. 0·9760.

When the sp. gr. of Alcohol is 0·920 it is called **Proof Spirit**; if lighter than this, it is called 'above proof'; if heavier than this, 'under proof'; and the percentage of Water, or of Rectified Spirit, sp.gr. 0·825 (the Inland Revenue Standard), by measure, necessary to be added to any sample of spirit to bring it to the standard of Proof Spirit, indicates the number of degrees the given sample is above or below proof. Thus, if 100 volumes of a Spirit require 10 volumes of Water to reduce it to proof, it is said to be '10 over proof'; on the other hand, if 100 volumes of Spirit require 10 volumes of Spirit to raise it to proof, the sample is said to be '10 under proof.'

**U.S.** defines four strengths of Alcohol: **Alcohol Absolutum**, containing 99 p.c. of Alcohol; **Alcohol**, 94 p.c.; **Alcohol Deodoratum**, 95·1 p.c.; and **Alcohol Dilutum**, 48·6 p.c. All by volume.

**Ger.** describes four strengths: **Alcohol Absolutus**, con-

taining 99·4 to 99·7 p.c. of Alcohol; Spiritus, 90 to 91·2 p.c.; Spiritus Dilutus, 68 to 69 p.c.; Spiritus e Vino, 37 to 41 p.c. The three former by volume, the last by weight.

**Relative Strength of Wines and Spirits.**—The following figures represent the average strength in Alcohol by Volume: Jamaica Rum, about 69 p.c.; Proof Spirit, about 57 p.c.; Whisky, about 51 p.c.; Brandy, about 48 p.c.; Gin, about 47 p.c.; Port, Sherry and Madeira, about 20 p.c.; Burgundy, Claret, Hock and Moselle, about 10 p.c.; strong Ale and Stout, 7 to 8 p.c.; Beer and Cyder, 5 to 6 p.c.

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## SPIRITUS VINI GALLICI.

### BRANDY.

A spirituous liquid distilled from wine and matured by age, and containing not less than 36½ p.c. by weight or 43½ p.c. by volume of Ethyl Hydroxide.

Official in Dutch Supp., also Spiritus Vini Cognac.

The Lancet Analytical Commission on Brandy stated that there is abundant reason for the acceptance of the B.P. definition as the basis of a standard. As Brandy is so generally regarded as superior to other spirits, from a medicinal point of view, some control over the sale of substitutes should be established.—L. '02, ii. 1518; '03, i. 70.

### MISTURA SPIRITUS VINI GALLICI. MIXTURE OF BRANDY.

Rub the yolks of two Eggs with  $\frac{1}{2}$  oz. of Refined Sugar; add 4 fl. oz. of Cinnamon Water and 4 fl. oz. Brandy.

**Dose.**—As a draught, 1 to 2 fl. oz. = 28·4 to 56·8 c.c.

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Not Official.

### STANNI OLEAS.

A greyish, coarsely granular powder, insoluble in Alcohol, very slightly soluble in Almond Oil, completely disintegrated and partially dissolved by Ether or Oleic Acid.

**UNGUENTUM STANNI OLEATIS.**—Stannous Oleate, 60 grains; Lard, 1 oz.

Of great utility in diseases of the nails; it overcomes the brittle, split and soft conditions of the nails, and gives them a brilliant lustre.—B.M.J. '84, ii. 753; T.G. '86, 494.

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### STAPHISAGRIÆ SEMINA.

#### STAVESACRE SEEDS.

The dried ripe Seeds of *Delphinium Staphisagria*.

Four samples of seeds yielded (by extraction with Ether) 31·4, 32·8, 33·9, and 34·8 p.c. of Oil.

**Medicinal Properties.**—The seeds have been used in ointments for many years as a parasiticide for pediculi; the activity rests in an Oil which they contain in rather large quantity. Mr. Balmanno Squire experimented with this Oil, and also with the Seeds from which the Oil had been withdrawn by Ether, and found the latter inert. He successfully used an ointment made with the Oil in prurigo senilis.

**Official Preparation.**—Unguentum Staphisagriæ.

**Not Official.**—Delphinina, Oleum Staphisagriæ, and Unguentum Olei Staphisagriæ.

**Official in Belg., Dutch Supp., Fr., Ital., Port., Mex., Span. and U.S.** Dutch Supp. has also 1 in 10 Tincture.

#### **UNGUENTUM STAPHISAGRIÆ. STAVESACRE OINTMENT.**

Digest 2 of crushed Stavesacre Seeds in 8½ of Benzoated Lard on a water-bath for two hours, squeeze through calico, and dissolve 1 of Yellow Beeswax in the hot liquid, and finally stir until cold.

About half the strength of B.P. '85, and Yellow Beeswax is added.

**Official in Ital., 1 and 3.**

#### **Not Official.**

**DELPHININA.**—An amorphous yellowish alkaloid, of resinous appearance, obtained from Stavesacre. Insoluble in Water, but dissolves in Acidulated Water, in Alcohol, Ether and Chloroform.

**Dose.**— $\frac{1}{6}$  grain = 0·0011 grammie; and repeat every two hours in neuralgia.—L.M.R. '87, 446; L. '87, ii. 879.

**OLEUM STAPHISAGRIÆ.**—The Oil obtained by expression from the Seeds.

It is insoluble in Alcohol (90 p.c.), but dissolves readily in hot Absolute Alcohol.

**UNGUENTUM OLEI STAPHISAGRIÆ.**—Expressed Oil, 60 minims; Lard, 1 oz. Used as a non-irritant remedy in scabies and in phtheiriasis.—British Skin.

#### **Not Official.**

#### **STEARIN.**

#### **COCOA-NUT STEARIN.**

This substance, which melts at about 84° F., is much more suitable for the manufacture of **suppositories** (especially in the cooler months of the year) than Oil of Theobroma; the melting point of the latter is so near the temperature of the body, that

the suppositories made with it frequently take a very long time to melt. Mixtures of Stearin and Theobroma Oil give intermediate figures.

Not Official.

### STILLINGIA.

QUEEN'S ROOT.

The Root of *Stillingia sylvatica* is Official in U.S. It is stated to contain an alkaloid 'Stillingine' which should not be confounded with the eclectic remedy 'Stillingin.' Has been used as an alterative remedy in syphilitic affections, and found useful also in secondary syphilis, scrofula and cutaneous diseases. Fluid Extract (1 in 1), dose 20 to 60 minims = 1·2 to 3·6 c.c., is Official in U.S., and forms a convenient means of exhibition.

### STRAMONII FOLIA.

STRAMONIUM LEAVES.

The dried Leaves of *Datura Stramonium*.

They contain an alkaloid, Daturine, identical with Hyoscyamine.

**Medicinal Properties.**—It is much used for asthma, in the form of cigarettes and smoking mixtures.

**Dose.**—*Ph. Ger.* maximum single dose, 0·2 gramme; maximum daily dose, 0·6 gramme.

Under the title *Daturæ Folia*, the dried leaves of *Datura fastuosa* are Official in the *Ind.* and *Col. Add.*, for India, the Eastern and West Indian Colonies.

**Official Preparation.**—Tinctura Stramonii.

**Not Official.**—Pulvis Stramonii Compositus, and Folia Stramonii Nitrata,

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Ital., Mex., Norw., Russ., Span., Swed., Swiss and U.S.**

### TINCTURA STRAMONII. TINCTURE OF STRAMONIUM.

1 of Stramonium Leaves, percolated with Alcohol (45 p.c.) to yield 5.

B.P. '85 tincture was from the seeds, with Proof Spirit.

**Dose.**—5 to 15 minims = 0·3 to 0·9 c.c.

Not Official.

**PULVIS STRAMONII COMPOSITUS.**—Stramonium leaves, *Datura Tatula*, *Cannabis Indica*, and *Lobelia Inflata*, all in powder, of each 6 drm.; Nitre in powder, 1 oz.; Eucalyptus Oil, 30 minims; mix thoroughly.

It burns well, gives off dense fumes, and affords great relief during asthmatic attacks.—*B.M.J.* '84, ii. 465; '87, ii. 494.

**Species Antasthmaticæ** is Official in Dutch Supp.

Several formulæ, somewhat similar to the above, appear in the Hospital Pharmacopeias. **Himrod's cure** and several other similar preparations have also been recommended for asthma.

**Folia Stramonii Nitrata.**—Coarsely powdered *Stramonium Leaves*, 2; Potassium Nitrate, 1; Water, 3; soak, and after twelve hours, dry.

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## STRAMONII SEMINA.

### STRAMONIUM SEEDS.

The dried ripe Seeds of *Datura Stramonium*.

The mixed alkaloids of *Stramonium* are generally called **Daturine**, but are the same as contained in *Belladonna*, viz. a mixture of Hyoscyamine and Atropine.

The dried Seeds of *Datura fastuosa* are Official in the *Ind. and Col. Add.* for India and the Eastern Colonies; also **Tinctura Daturæ Seminum** (1 in 4), dose 5 to 15 minims = 0·3 to 0·9 c.c.

**Medicinal Properties.**—Similar to those of *Belladonna*. Antispasmodic and sedative in spasmodic and bronchitic asthma. The Extract and the Tincture are used in convulsive cough as antispasmodics. The Extract has been given with success for hay asthma. Like *Belladonna*, it causes dilatation of the pupil.

**Official Preparation.**—*Extractum Stramonii*.

**Not Official.**—*Guttæ Daturinæ*.

**Antidotes.**—Same as for poisoning with *Belladonna*, p. 124; also Morphine subcutaneously, and Chloroform Inhalation.

**Official in Belg., Fr., Port. (Estramonio), Swiss and U.S.**

## EXTRACTUM STRAMONII. EXTRACT OF STRAMONIUM.

A firm Extract, prepared by exhausting *Stramonium Seeds*, in No. 40 powder, with Alcohol (70 p.c.), and evaporation of the percolate.

Now made with Alcohol (70 p.c.) in place of Proof Spirit and the removal of fixed Oil by Ether omitted.

**Dose.**— $\frac{1}{4}$  to 1 grain = 0·016 to 0·06 gramme.

**Not Official.**

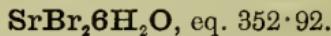
**GUTTÆ DATURINÆ.**—Daturine Sulphate, 2 grains; Water, 1 fl. oz.—*London Ophthalmic*.

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Not Official.

**STRONTII BROMIDUM.**

STRONTIUM BROMIDE.



Colourless, translucent, hexagonal, deliquescent prisms, having a bitter saline taste. It should be kept in well-stoppered bottles.

**Strontii Bromidum Exsiccatum** is also commercial. 69 of the anhydrous is equivalent to 100 of the crystallised salt.

**Solubility.**—2 in 1 of Water; 1 in 3 of Alcohol (90 p.c.).

**Medicinal Properties.**—Recommended in chronic gastritis and dilated stomach, in doses of 30 grains thrice daily, also the same doses in epilepsy; it does not possess the depressing effect of Potassium Bromide.—*B.M.J.* '92, ii. 1286; '95, i. 1089, 1252; *B.M.J.E.* '95, i. 76; *L.* '92, i. 47; '93, ii. 46; '95, i. 567; '96, ii. 871; '98, ii. 988; *T.G.* '91, 830; '92, 120. In acute gastric catarrh, *Pr.* liii. 130; in the treatment of vomiting, *T.G.* '93, 115; in enteritis, *M.A.* '95, 239; in exophthalmic goitre in children.—*B.M.J.* '98, ii. 1042.

15 grains three times daily, increasing the amount if necessary to 20 grains and then to 30 grains and 40 grains three times daily until seizures are under control. Whilst in some cases apparently of greater value than Potassium Bromide in controlling epileptic seizures, yet on account of the more rapid action of the latter, its more lasting effect, the smaller dose required, and lastly, its cheapness, the Potassium salt must be regarded as the more generally useful in the treatment of epilepsy.—*L.* '99, ii. 411.

It has an unpleasant, metallic taste.

**Dose.**—5 to 30 grains = 0·32 to 2 grammes.

3 drm. daily has been given for weeks without any unpleasant symptoms.—*L.* '98, ii. 988.

**Official in U.S.**

**STRONTII CINNAMAS.**—A white, or whitish, amorphous powder, soluble 1 in 100 of Water; insoluble in Alcohol (90 p.c.). It has been used suspended in three parts of Glycerin to five parts of Water in the treatment of cancer and other forms of malignant disease.—*L.* '03, ii. 750.

**STRONTII IODIDUM.**—Translucent, colourless, hexagonal prisms, readily soluble in water, possessing a bitter saline taste. On account of its hygroscopic nature it should be kept in well-stoppered bottles. It has been used in place of the alkaline Iodides in chronic endocarditis.

**Dose.**—7½ to 15 grains = 0·5 to 1 gramme.

**Official in U.S.**

**STRONTII LACTAS.**—A white granular powder, or in crystalline nodules, soluble 1 in 3 of Water. Has been recommended for albuminuria in parenchymatous nephritis.—*L.* '92, i. 47; '95,

i. 567; '96, i. 255; T.G. '94, 461; B.M.J.E. '96, ii. 76; '97, ii. 40. Excellent diuretic in Bright's disease.—L. '94, ii. 992.

**Dose.**—20 to 30 grains = 1·3 to 2 grammes.

**Official in U.S.**

**STRONTII SALICYLAS.**—A white powder, slightly soluble in Water. Has been recommended as an intestinal antiseptic; also in gouty and rheumatic conditions.—C.D. '95, i. 291; P.J. '96, ii. 63; '97, ii. 118.

**Dose.**—5 to 15 grains = 0·32 to 1 gramme.

## STROPHANTHI SEMINA.

### STROPHANTHUS SEEDS.

The dried ripe Seeds of *Strophanthus Kombé*, freed from the awns.

The commercial seed usually contains the seeds of other species in addition to those of *S. Kombé*.—P.J. (3) xix. 660. The active principle is a glucoside, **Strophanthin**.

**Medicinal Properties.**—A cardiac tonic. Especially valuable in mitral regurgitation with failure of compensation, and in aortic regurgitation accompanied by cardiac insufficiency. The active principle being very soluble and diffusible, Strophanthus acts with such rapidity that it is more useful than Digitalis in promptly stimulating extreme or sudden cases of cardiac failure. It is easily eliminated, it is not cumulative, it can be administered over a long period of time, and, unless there be marked gastrointestinal catarrh, it has no tendency to produce digestive disturbance. It has acted beneficially in many cases in which Digitalis has failed or has disagreed.

Strophanthus acts more energetically on the heart than on the vessels, whereas Digitalis acts on the vessels as much as, or even more than, on the heart. Digitalis thus possesses the power of increasing arterial tension, and so of putting extra strain on the heart; therefore, in those cases in which pulse tension is high, Strophanthus is to be preferred. Strophanthus has also been found of great value in avoiding both the cardiac embarrassment so frequently fatal in acute pneumonia and the collapse which may occur at the crisis.

A more powerful cardiac tonic than Digitalis and superior as diuretic.—B.M.J. '95, i. 368; B.M.J.E. '97, ii. 3; '98, i. 12; T.G. '98, 36.

In Graves' disease.—L. '93, ii. 822. In alcoholism.—L. '94, ii. 212.

As to the disparity in the results obtained by different observers,

Fraser remarks that, 'there are several species of the genus, and that while the therapeutic effects have been determined with only one of these species, the seeds of several of the others have indiscriminately been substituted. The whole fruit, and not the seeds only, and immature seeds, poor in the active principle and rich in irritating resin, have been used to prepare the Tincture; seeds already exhausted with Alcohol have been re-sold in the market; and further, even when good seeds were used, Petroleum Ether has been substituted for Ethylic Ether, preparatory to percolation with Rectified Spirit, with the result that the Tincture (1885) contained much resin, which produced stomach and intestinal disorder.'

**Official Preparations.**—Extractum Strophanthi and Tinctura Strophanthi.

**Not Official.**—Strophanthin and Ouabain.

**Official in Austr., Dan., Dutch Supp., Fr., Ger., Ital., Mex., Norw., Russ., Swiss, and U.S.**

#### **EXTRACTUM STROPHANTHI. EXTRACT OF STROPHANTHUS.**

1 of Strophanthus Seeds, exhausted with Purified Ether, and dried, then percolated with Alcohol (90 p.c.) until 10 of percolate is obtained; concentrate this by evaporation to a thick liquid, and add Milk Sugar *q.s.* to yield 2 of Extract, in powder.

**Dose.**— $\frac{1}{4}$  to 1 grain = 0.016 to 0.06 grammes.

**Official in Fr. and Mex.**

#### **TINCTURA STROPHANTHI. TINCTURE STROPHANTHUS.**

Percolate 1 of Strophanthus Seeds, in No. 30 powder, with Alcohol (70 p.c.) until 20 is obtained, and dilute with Alcohol (70 p.c.) to yield 40.

Now 1 in 40 instead of 1 in 20; making the dose uniform with Tincture of Digitalis.

**Dose.**—5 to 15 minims = 0.3 to 0.9 c.c.

**Official in Dutch Supp., Ital. and U.S., 1 in 20; Norw., 1 and 10; Austr. Add., Dan., Ger., Russ., Swed and Swiss, 1 in 10; Fr., 1 and 5; Mex., 1 in 5.** All by weight except U.S.

#### **Not Official.**

**STROPHANTHIN.**—A pale yellow amorphous powder, or in white microscopic crystalline plates. It possesses an intensely bitter taste and is extremely poisonous.

Recommended as a heart tonic.—*L.* '90, ii. 415; *Pr.* xlv. 130.

**Solubility.**—Freely in Water and in Alcohol (90 p.c.); practically insoluble in Chloroform, Ether, and in Carbon Bisulphide.

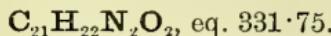
**Dose.**— $\frac{1}{300}$  to  $\frac{1}{200}$  grain = 0.0002 to 0.00032 grammes.

**Ouabain.**—White, odourless and tasteless slender transparent needles, practically insoluble in cold Water and in Alcohol (90 p.c.), insoluble in Ether and in Chloroform. It has been recommended medicinally in half the doses of Strophanthin, in cases where Strophanthus and Digitalis both fail. The action is similar to Strophanthin. It is obtained from the Somali arrow poison yielded by *Acokanthera Ouabaio* of the same natural order as Strophanthus.

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## STRYCHNINA.

### STRYCHNINE.



Translucent, colourless rhombic prisms or a white crystalline powder. Permanent in the air. This alkaloid is odourless but possesses an intensely bitter taste and is extremely poisonous. It may be obtained from the dried ripe seeds of *Strychnos Nux Vomica*, *Ignatia Amara*, and other species of *Strychnos*.

**Solubility.**—1 in 6000 to 8000 of Water; 1 in 170 of Alcohol (90 p.c.); 1 in 250 of Alcohol (70 p.c.); about 1 in 400 of Alcohol (60 p.c.); 1 in 800 of Alcohol (45 p.c.); 1 in 4200 of Alcohol (20 p.c.); 1 in 350 of Absolute Alcohol; 1 in 6 of Chloroform; nearly insoluble in Ether.

**Medicinal Properties.**—Similar to those of *Nux Vomica*; useful in the treatment of reflex or functional paralysis; and of peripheral neuritis and paralysis due to alcohol, tobacco, or diphtheria; also in cases of lead-palsy. As a bitter tonic improving the appetite and promoting digestion; it increases peristalsis, and is therefore a useful addition to other purgatives. Recommended in chronic Alcoholism, muscular tremors, tobacco amblyopia, impotence and nervous exhaustion. For other uses and for its contra-indications, see *Nux Vomica*. It has a cumulative action and is a very active poison.

An antidote in Chloroform poisoning.—*B.M.J.E.* '94, i. 47. In Snake-bites, *T.G.* '93, 542; '94, 517.

In the treatment of surgical shock 10 minimis of Liquor Strychnæ given subcutaneously just before commencing anaesthesia, followed after the operation by 5 minimis subcutaneously injected every two hours for several hours if called for.—*L.* '02, i. 1025, 1063, 1210, 1357, 1497; *B.M.J.* '99, ii. 1471.

**Dose.**— $\frac{1}{60}$  to  $\frac{1}{15}$  grain = 0.0011 to 0.0044 grammie.

**Prescribing Notes.**—May be given in the form of pill well triturated with Milk Sugar and the addition of 'Diluted Glucose,' q.s., but it is more frequently prescribed in solution.

**Antidotes.**—ANIMAL CHARCOAL or TANNIC ACID, followed by an emetic, or the stomach-tube. POTASSIUM BROMIDE, in  $\frac{1}{2}$  ounce in Water, with 30 grains of CHLORAL. 2 drm. of the Bromide, with or without 10 grains of Chloral, may be given every 15 or 20 minutes if necessary. AMYL NITRITE inhalations, the Amyl being poured freely on a handkerchief and held close to the nose. The patient may be kept fully under CHLOROFORM or ETHER. CURARE,  $\frac{1}{3}$  grain, by hypodermic injection. *Artificial respiration if possible.* —Murrell.

A case of recovery after taking 3 grains of Strychnine.—*L.* '67, ii. 41, 118.

8 grains of Morphine said to be an antidote for 1 grain of Strychnine.—*L.* '71, ii. 840.

Official in Belg., Fr., Port., Mex., Span. and U.S.

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## STRYCHNINÆ HYDROCHLORIDUM.

STRYCHNINE HYDROCHLORIDE.

HYDROCHLORATE OF STRYCHNINE.—*B.P.* '85.

$C_{21}H_{22}N_2O_2 \cdot HCl \cdot 2H_2O$ , eq. 403·70.

Translucent, colourless, prismatic crystals or white silky crystalline needles ; it is efflorescent in dry air, and should therefore be kept in well-stoppered bottles. It possesses an intensely bitter taste. It is Officially described as the Hydrochloride of an alkaloid obtained from *Nux Vomica* and from other species of *Strychnos*.

**Solubility.**—1 in 35 Water, 1 in 73 Alcohol (90 p.c.) ; insoluble in Ether.

**Medicinal Properties.**—See ‘Strychnina.’

**Dose.**— $\frac{1}{60}$  to  $\frac{1}{15}$  of a grain = 0·0011 to 0·0044 grammes.

*Ph. Ger.* maximum single dose, 0·01 gramme ; maximum daily dose, 0·02 gramme of the Nitrate.

**Official Preparation.**—Liquor Strychninæ Hydrochloridi.

**Incompatibles.**—Alkalies and Alkaline Carbonates, Bromides and Iodides, Liquor Sodii Arsenatis, and Liquor Arsenicalis.

**LIQUOR STRYCHNINÆ HYDROCHLORIDI.** SOLUTION OF STRYCHNINE HYDROCHLORIDE. SOLUTION OF HYDROCHLORATE OF STRYCHNINE.—*B.P.* '85.

Strychnine Hydrochloride, 17½ grains ; Alcohol (90 p.c.), 1 fl. oz. ; Distilled Water, *q.s.* to yield 4 fl. oz. (1 in 100)

**Dose.**—2 to 8 minims = 0·12 to 0·5 c.c.

11 minims contain  $\frac{1}{10}$  grain of Strychnine Hydrochloride.

2 minims subcutaneously injected for peripheral paralysis.

## Not Official.

**STRYCHNINÆ NITRAS.**—Colourless, silky, crystalline needles, possessing an extremely bitter taste. Soluble 1 in 63 of Water and 1 in 120 of Alcohol (90 p.c.).

Official in Austr., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Russ., Swed. and Swiss.

**Hypodermic Tablets** are made containing  $\frac{1}{40}$  and  $\frac{1}{100}$  grain Strychnine Nitrate; and  $\frac{1}{30}$ ,  $\frac{1}{32}$ ,  $\frac{1}{60}$ , and  $\frac{1}{150}$  grain of Strychnine Sulphate.

**STRYCHNINÆ SULPHAS** (Strychnine Sulphate).—Colourless, or white, odourless, efflorescent, prismatic crystals, possessing an intensely bitter taste. It should be preserved in well-stoppered bottles. Soluble 1 in 48 of Water; 1 in 135 of Alcohol (90 p.c.).

Official in Belg., Fr., Mex., Port., Span., Swiss and U.S.

**Strychnine Acetate**, in colourless, acicular crystals, or as a white crystalline powder, soluble in dilute Acetic Acid; **Strychnine Hydrobromide**, in colourless, translucent, prismatic crystals, or as light, white silky acicular crystals, soluble 1 in 65 of Water, 1 in 96 of Alcohol (90 p.c.); and **Strychnine Valerianate**, in pearly white crystals, or as a white crystalline powder, possessing an odour of Valerianic Acid, slightly soluble in Water; are non-official salts of Strychnine, which have from time to time received attention in medical literature.

**Strychninæ Meta-vanadas** has been used in tuberculosis, neurasthenia and atonic dyspepsia.—*B.M.J.E.* '01, ii. 88.

## STYRAX PRÆPARATUS.

### PREPARED STORAX.

A light brown, or brownish-yellow semi-crystalline, thick balsam, possessing a pleasant aromatic odour, and a sharp pungent balsamic taste. It is obtained from the trunk of *Liquidambar orientalis*, and purified by solution in Ethylic Alcohol, filtration and evaporation of the solvent.

Owing to loss of volatile constituents of the resin during the evaporation of the solvent, Ethylic Alcohol is unsuitable for purification of the resin, and a more volatile solvent would have been preferable, the only objection being greater inflammability.

It contains free Cinnamic Acid,  $\alpha$  and  $\beta$  Storesinol, Styrol and Styracin (Cinnamyl Cinnamate).

**Medicinal Properties.**—Similar in action to the Balsams of Peru and Tolu. The Ointment (1 to 4) is useful as a parasiticide in scabies and phtheiriasis.

**Official Preparation.**—Contained in *Tinctura Benzoini Composita*.

Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.

## SUCCI.

### JUICES.

Juices expressed from fresh medicinal plants, and preserved by the addition of Alcohol, were introduced by Peter Squire in 1835 (*P.J.* vol. i). By thus obtaining and preserving the juice of the plant, its properties are not impaired by the action of the heat employed in making an Extract.

*Succus Belladonnæ*, *Succus Conii*, *Succus Hyoscyami*, *Succus Scoparii*, and *Succus Taraxaci*, consist of 3 parts of Juice and 1 of Alcohol (90 p.c.).

*Succus Limonis* is freshly expressed and contains no Alcohol.

The *Alcoolatures* of the Fr. are made by digesting equal weights of fresh plant and Rectified Spirit together for 10 days ; pressing and filtering. Aconite, Belladonna, Conium (*Ciguë*), Digitalis, Eucalyptus, Henbane (*Jusquiame*), Stramonium Leaves, Flowers and Corms of Colchicum, are so prepared.

### Not Official.

## SUCCINUM.

### AMBER.

Translucent or opaque, hard brittle, yellow, yellowish-brown or yellowish-red solid, breaking with lustrous conchoidal fracture.

A fossil resinous exudation from *Pinites succinifer*, an extinct coniferous tree, on the shores of the Baltic.

Official in Belg., Dutch, Fr. (*Succin*), Mex. (*Ambar Amarillo*), Port. (*Ambar*), Span. (*Sucino*) and Swed.

**OLEUM SUCCINI RECT.**—A transparent, pale yellow or brownish-yellow limpid oily liquid, possessing a characteristic disagreeable odour and burning acrid taste. It is a volatile Oil obtained by the destructive distillation of Amber, and purified by subsequent rectification.

Externally it is stimulant and rubefacient.

**Dose.**—1 to 3 minims = 0·06 to 0·18 c.c.

Official in Belg., Dan., Dutch Supp., Hung., Norw., Port. and Span.

**LINIMENTUM SUCCINI.**—Oil of Amber, 1; Spirit of Camphor 1; Spirit of Hartshorn, 1.

A domestic embrocation for whooping-cough.

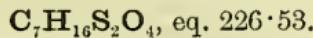
**TINCTURA SUCCINI.**—Amber, 1; Alcohol (90 p.c.), 16.

**Dose.**—25 minims = 1·5 c.c. in Water for headache.

Official in Dutch, 1 Amber and 5 ; Fr., Succin 1, Alcohol (80°), 10 ; Port., 2·8 Oil in 10 ; Swed., 1 Amber in 5.

## SULPHONAL.

### SULPHONAL.



Colourless, odourless, almost tasteless, prismatic crystals ; or a white odourless powder. Permanent in the air.

Chemically it is Dimethyl-methane-diethylsulphone, and is produced by the oxidation of Mercaptol (Dithio-ethyldimethylmethane). It belongs to the class of Di-sulphones to which Trional and Tetronal also belong.

It is Officially required to be in crystals, but it is generally supplied in *powder* ; its action is stated to be quicker and more certain in that form than when administered in crystals.

**Solubility.**—1 in 500 of Water ; 1 in 15 of boiling Water ; 1 in 50 of Alcohol (90 p.c.) ; 1 in 3 of Chloroform ; 1 in 90 of Ether.

**Medicinal Properties.**—A pure hypnotic for simple insomnia, when pain is absent. Owing to its comparative insolubility, the action may be slow or even deferred, and in repeated doses it may be cumulative. It is more soluble in warm than in cold Water, and still more so in warm alcoholic drinks, the latter being the best form of administration. It rarely produces a habit. If taken in the form of a powder or tablet the action may be deferred for one or two hours, but if taken in solution the action is far more rapid.

Toxic effects following the administration of 35 grains given in divided doses of 20 and 15 grains at an interval of twenty-four hours. Recovery.—*B.M.J.* '99, i. 209.

A case in which a quantity of 300 grains was taken in two doses of 150 grains ; only slight drowsiness supervening owing to prompt action of emetics.—*B.M.J.* '00, i. 136.

Toxic cumulative effect of Sulphonal and Trional. The only treatment of any avail for Sulphonal poisoning is the free exhibition of alkalis ; when there is vomiting and great difficulty in getting the alkali taken in sufficient quantity the intravenous or interstitial transfusion of an alkaline solution might be tried. *B.M.J.* '99, ii. 1250.

A fatal case of hæmatoporphyrinuria following its use, also a record of another fatal case in which only 30 grains had been taken in two doses.—*B.M.J.* '01, i. 1473 ; *T.G.* '01, 618.

Valuable in early cases of insanity, but in ordinary acute insanity, with extreme restlessness and sleeplessness, Sulphonal even in moderate doses was injurious. The prolonged use of

Sulphonal was pernicious from the point of view of auto-intoxication.—*L.* '02, i. 1539.

May be tried for the sleeplessness of uræmic patients; the dose should not be large.—*Pr.* lxvii. 658.

A serious feature in most of the fatal cases of poisoning is that usually the patients have been under treatment for some time and have been apparently benefited by the drug up to the time of the appearance of toxic symptoms.—*L.* '03, i. 1023; *B.M.J.* '03, i. 853.

The urine of patients taking Sulphonal is stated to reduce Fehling's Solution.—*B.M.J.E.* '95, ii. 43; *P.J.* (3) xxv. 1124.

**Dose.**—10 to 30 grains = 0·65 to 2 grammes.

**Prescribing Notes.**—*It is given in mixtures suspended with Compound Tragacanth Powder 60 grains to 6 fl. oz. of Water. Also in cachets, capsules, Compressed Tablets, or in powders, to be taken in hot Water, or hot Spirits and Water.*

**Not Official.**—Trional and Tetronal.

**Official in Austr.** Add., Dan., Dutch Supp., Fr. (Acetone-diethylsulfone), Ger., Ital. (Solfonale), Mex., Norw., Russ., Swed. and Swiss.

#### Not Official.

**TRIONAL** (Methyl-sulphonal).—A white crystalline powder with a faintly bitter taste. Is analogous in composition to Sulphonal, but with a Methyl group replaced by Ethyl.

**Solubility.**—1 in 320 of Water; 1 in 11 of Alcohol (45 p.c.).

**Medicinal Properties.**—A pure hypnotic like sulphonal, but acts more rapidly. It does not produce a habit.

Useful in insomnia, melancholia, mania, and in many nervous affections.—*B.M.J.E.* '94, ii. 24; '95, i. 16; '95, ii. 16, 39, 47, 55; '96, i. 47; *B.M.J.* '95, i. 153; *L.* '95, i. 426, 1024; '96, i. 1102; '97, i. 883; in delirium tremens—*B.M.J.E.* '94, ii. 60; in sleeplessness of children.—*L.* '95, i. 49, 1468; ii. 1060; may induce constipation.—*L.* '94, ii. 346.

Unfavourable results in cancer.—*P.J.* '98, i. 42.

**Poisonous effects.**—*B.M.J.E.* '95, ii. 76; not produced if used cautiously.—*B.M.J.E.* '96, i. 27.

In the treatment of insomnia and delirium due to combined alcoholism and nicotinism, 10 to 30 grains given at first; after a few trials 15 grains every four hours and up to 90 grains per diem were given.—*L.* '01, ii. 223.

5 to 10 grain doses administrated thrice daily in the treatment of chorea.—*B.M.J.* '01, ii. 1805; '02, i. 267.

15 grains administered every other night for fifteen weeks produced toxic symptoms.—*L.* '03, i. 1023; *B.M.J.* '03, i. 853.

Acute poisoning caused by taking twenty-five 5-grain tablets at one dose. Recovery.—*L.* '03, i. 1096.

**Dose.**—For children, 5 to 10 grains = 0·32 to 0·65 grammes; for adults, 15 to 30 grains = 1 to 2 grammes, usually given in

cachets followed by a hot drink, or suspended with Tragacanth like Sulphonal.

*Ph. Ger.* maximum single dose, 2 grammes; maximum daily dose, 4 grammes.

**Official** in Austr. Add., Dutch Supp., Fr. Supp.; Ger. (Methyl-sulphonatum).

**TETRONAL** (Diethylsulphon-diethylmethane).—It is analogous in composition to Sulphonal, but with two Methyl groups replaced by Ethyl. A white crystalline odourless powder. Soluble 1 in 550 of Water; 1 in 12 of Alcohol (90 p.c.).

It is a hypnotic resembling Sulphonal.

**Dose.**—10 to 20 grains = 0·65 to 1·3 grammes.

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Not Official.

### SULPHUR.

SULPHUR.

S, eq. 31·82.

Sulphur occurs native, and is found in masses or in the powdery form mixed with various impurities. It is abundant in volcanic countries, as in Sicily, and in some parts of Italy. It readily volatilises, and when the vapours are passed into a large brick chamber kept cold, it condenses in fine powder (Sublimed Sulphur), but when a small chamber is used and kept at a temperature of about 120° C. (248° F.), it condenses in the liquid form and is run into moulds (Roll Sulphur).

**Official** in Belg., Sulphur Venale; Fr., Soufre; Ital., Solfo; Port., Enxofre; Mex. and Span., Azufre; Swed.

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### SULPHUR PRÆCIPITATUM.

PRECIPITATED SULPHUR.

B.P. *Syn.*—MILK OF SULPHUR.

A light grey, or greyish-yellow, smooth, amorphous powder, sometimes possessing a slight odour of Sulphuretted Hydrogen.

It should be completely soluble in Carbon Bisulphide, and be free from Arsenic and undue acidity.

**Medicinal Properties.**—Similar to those of Sulphur Sublimatum, only more active. Mixed with Milk and rubbed till smooth, children take it readily.

**Dose.**—20 to 60 grains = 1·3 to 4 grammes.

**Official Preparation.**—Trochiseus Sulphuris.

**Not Official.**—*Lotio Sulphuris, Trochiscus Sulphuris Compositus and Unguentum Sulphuris Precipitati.*

**Official in** all the Foreign Pharmacopeias; Fr., Soufre Précipité; Ital., Solfo Precipitato; Port., Enxofre Precipitado; Mex. and Span., Azufre Precipitado.

LAC SULPHURIS of former Pharmacopœias contained a large amount of Calcium Sulphate, owing to Sulphuric Acid being used in its preparation, but as Hydrochloric Acid is now employed, no distinction should be made between Milk of Sulphur and Precipitated Sulphur.

### TROCHISCUS SULPHURIS. SULPHUR LOZENGE.

Contains 5 grains of Precipitated Sulphur, and 1 grain Acid Potassium Tartrate in each, flavoured with Tincture of Orange.

**Dose.**—1 to 6 lozenges.

#### Not Official.

**LOTIO SULPHURIS.**—Precipitated Sulphur,  $\frac{1}{2}$  oz.; Glycerin, 120 minimis; Alcohol (90 p.c.), 1 fl. oz.; Rose Water, 3 fl. oz.; Lime Water, 3 fl. oz. Recommended in acne of the face.—*L.* '87, i. 66.

**TROCHISCUS SULPHURIS COMPOSITUS.**—Each lozenge contains 5 grains of Precipitated Sulphur, and 1 grain of Cream of Tartar.

These lozenges differ from the Official Sulphur lozenge in that they contain no Orange, and are therefore preferred by many.

A convenient form of administering Sulphur as a general laxative, in cases of sluggish liver, bleeding piles, and habitual constipation.—*L.* '89, i. 665.

**UNGUENTUM SULPHURIS PRÆCIPITATI.**—Precipitated Sulphur, 2; Potassium Carbonate, 1; Lard, 8. Excellent for scabies.

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## SULPHUR SUBLIMATUM.

### SUBLIMED SULPHUR.

*B.P. Syn.*—FLOWERS OF SULPHUR.

A bright yellow or greenish-yellow amorphous powder, possessing a faint characteristic odour, or a bright yellow or greenish-yellow solid, usually in the form of sticks or rolls having a crystalline structure.

It should be free from Arsenic, and should contain no undue amount of acidity, but only 'washed' Sulphur can be expected to conform to the Official test. It may be prepared from native Sulphur or Sulphides.

**Solubility.**—Insoluble in water. Slightly soluble in hot Alcohol. Only partially soluble in Carbon Bisulphide.

**Medicinal Properties.**—Laxative, alterative, diaphoretic, expectorant. Employed internally in haemorrhoidal

affections and chronic rheumatism, hepatic congestion, gout and syphilis, chronic bronchitis and many skin diseases; externally also for skin diseases, especially scabies and acne.

Dusted on the membrane in diphtheria.—*B.M.J.* '93, ii. 993; '94, i. 459; *L.* '95, i. 265, 327. As an antiseptic in surgery.—*L.* '94, ii. 1098. 20 grains with or without 5 grains of Dover's powder three times daily in the treatment of dysentery.—*L.* '01, ii. 1406.

In the treatment of typhoid fever, 20 grains every two hours up to 154 grains in the day for adults, for children 5 to 7½ grains every two hours, up to 60 grains in the day.—*B.M.J.E.* '02, ii. 83.

**Dose.**—20 to 60 grains = 1·3 to 4 grammes.

**Official Preparations.**—Confectio Sulphuris and Unguentum Sulphuris; contained in Pulvis Glycyrrhizæ Compositus. Used in the preparation of Acidum Sulphuricum, Acidum Sulphurosum, Emplastrum Ammoniaci cum Hydrargyro, Emplastrum Hydrargyri, Antimonium Sulphuratum, Potassa Sulphurata, Sulphur Precipitatum and Sulphuris Iodidum.

**Not Official.**—Unguentum Sulphuris Compositum, and 'Chelsea Pensioner.'

**Official** in all the Foreign Pharmacopœias.

### CONFECTIO SULPHURIS. CONFECTION OF SULPHUR.

Sublimed Sulphur, 4 oz.; Acid Potassium Tartrate, 1 oz.; Tragacanth, in powder, 18 grains; Syrup, 2 fl. oz.; Tincture of Orange, ½ fl. oz.; Glycerin, 1½ fl. oz. (1 in 2½)

Now made with Glycerin, Syrup, and Tincture of Orange in place of Syrup of Orange Peel.

**Dose.**—60 to 120 grains = 4 to 8 grammes.

### UNGUENTUM SULPHURIS. SULPHUR OINTMENT.

Sublimed Sulphur, finely sifted, 1; Benzoated Lard, 9.

Now 1 in 10, formerly 1 in 5.

Precipitated Sulphur makes a more active Ointment, and Essence of Lemon covers the odour.

An ointment ¼ of B.P. '85 strength exerts a destructive effect on the ringworm fungus.—*B.M.J.* '89, i. 398.

### Not Official.

#### UNGUENTUM SULPHURIS COMPOSITUM. *Syn.*—UNG. AD SCABIEM VIENNENSE. WILKINSON'S OINTMENT.

Sulphur, 15; Chalk, 10; Tar, 15; Lard, 30; Soap, 30.

**Official** in Austr. Add., Sulphur 30, Chalk 5, Tar 30, Lard 30, Mutton Suet 30, Potash Soap 60; Dutch Supp., Sulphur 4, Zinc Sulphate 2, Lard 19, Unguentum Sulfuratum; Hung., Norw. and Swed.

'CHELSEA PENSIONER.'—Sulphur, 6; Mustard, 6; Powdered

Guaiacum, 3; Rhubarb,  $1\frac{1}{2}$ ; Nitre,  $1\frac{1}{2}$ : mix. Honey or Treacle sufficient to make it into an Electuary.

**Dose.**—A teaspoonful every alternate evening for rheumatism; it is also taken in the morning as an aperient to regulate the bowels.

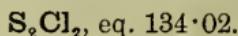
*See also GUAIACUM, p. 317.*

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### Not Official.

## SULPHURIS CHLORIDUM.

### SULPHUR CHLORIDE.



A mobile reddish-yellow liquid, sp. gr. 1·69, with a penetrating disagreeable odour, and fuming strongly in air. Prepared by the direct union of Chlorine with Sulphur. It dissolves without decomposition in Carbon Bisulphide or Benzol, but is decomposed by Water, Alcohol or Ether.

**UNGUENTUM SULPHURIS HYPOCHLORITIS.**—Sublimed Sulphur, 1 oz.; Sulphur Chloride, 1 fl. drm.; Spermaceti Ointment (B.P. 1867), 8 oz.: Essential Oil of Almonds, 80 minims, is usually added to mask the disagreeable odour.

Used in the treatment of scabies and acne.

Occasionally made of twice this strength.

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## SULPHURIS IODIDUM.

### SULPHUR IODIDE.

Greyish-black crystalline masses possessing a metallic lustre, and evolving a strong odour of Iodine. It should be kept in well-stoppered bottles in a cool place. Like Iodine, it stains the skin. It is prepared by direct combination of Iodine and Sulphur by heating them together.

The proportions of Iodine and Sulphur are used in equivalents to form SI, eq. 157·72, but the combination is a very loose one.

**Solubility.**—1 in 16 of Glycerin; 1 in 4 of Carbon Bisulphide. Insoluble in cold Water.

**Medicinal Properties.**—The Ointment is an excellent remedy for acne rosacea, and for parasitic, tubercular and other diseases of the skin.

**Official in Belg., Ioduretum Sulphuris; Dutch, Iodetum Sulphuris c. Sulphure; Mex., Yoduro de Azufre; Port., Enxofre Iodado; Span., Ioduro de Azufre; U.S., Sulphuris Iodidum.**

**UNGUENTUM SULPHURIS IODIDI.** SULPHUR IODIDE OINTMENT.

Rub 20 grains of Sulphur Iodide with 20 grains of Glycerin to a smooth paste in a warmed mortar, and gradually add 460 grains of Benzoated Lard, and stir until cold.

Now 1 in 25 instead of 1 in 15 $\frac{1}{2}$ . Glycerin is added and Benzoated Lard replaces Hard and Soft Paraffin.

It is apt to be gritty unless carefully made; it becomes darker on keeping.

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**SUMBUL RADIX.**

## SUMBUL ROOT.

The dried transverse slices of the Root of *Ferula Sumbul*.

Imported from Russia. It possesses a powerful odour resembling Musk.

An inferior kind has of late years replaced the old Sumbul root. This inferior drug is probably the product of *Ferula suaveolens*.

**Medicinal Properties.**—A nervine tonic, carminative and antispasmodic, said to be useful in hysteria and nervous complaints.

Official in Mex.; Port., Sombula; U.S.

**TINCTURA SUMBUL.** TINCTURE OF SUMBUL.

Sumbul Root, 1; Alcohol (70 p.c.), 10; by maceration.

Now 1 in 10 instead of 1 in 8, and Alcohol (70 p.c.) used in place of Rectified Spirit.

**Dose.**— $\frac{1}{2}$  to 1 fl. dram. = 1·8 to 3·6 c.c.

Official in U.S., 1 in 10.

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**SUPPOSITORIA.**

Suppositories are for the most part prepared by the following general formula:—

Melt the Oil of Theobroma; triturate the active ingredient intimately with a little of the Oil, and add the mixture to the remainder of the melted Oil in a basin or dish; stir well, and as the mixture begins to thicken pour it into the moulds.

It is convenient to weigh out ingredients for one or two more suppositories than are required by the prescription. The so-called 15-grain moulds, sold for suppositories, do not always hold exactly 15 grains; it is advisable to check their capacity.

In those rare cases when moulds are not available, the

mixture may be allowed to cool, divided into the requisite number of parts, and shaped into a suitable form.

The moulds, previously made cold, must be kept so in summer by immersion in iced water. All difficulty in removing the suppositories from the moulds may be obviated by having the moulds previously wiped with oiled lint.

Hollow cones of suppository shape are made with Oil of Theobroma in various sizes; these can be filled with any desired medicament and closed with a plug; they are known as 'hollow suppositories.'

In India and the Colonies a quantity of Beeswax may be added to suit the temperatures for the time being, so as to produce a desirable consistence.

Cocoa-nut Stearin (p. 601), or a mixture of this with Oil of Theobroma, is a better basis for Suppositories than Oil of Theobroma in cold weather.

**Stearic Acid** is Official in the *Austr. Add.*, and is used for making Glycerin suppositories: To 5 of Sodium Carbonate dissolved in Glycerin 100 add Stearic Acid 9, and heat on a water-bath till saponified. Make into suppositories weighing 2 or 3 grammes. These require to be wrapped in tin-foil and dispensed in bottles, as they absorb moisture very rapidly and acquire a wet surface.

#### Not Official.

#### SUPRARENAL GLAND.

The suprarenal capsule consists of two distinctly different glandular organs, the cortex and the medulla. The fresh healthy glands of the ox or sheep are generally used for preparations. According to some authorities, the active principle is localised in the medullary substance whilst the cortical is described as inert, whilst others, though agreeing that the medulla contains the active principle, hold that the cortex is not inert. The active principle is not destroyed by the gastric juice, and may be boiled without losing its activity, thus allowing the comparatively easy preparation of sterilised solutions; it is, however, prone to absorb oxygen from the air and to become less active.

**Medicinal Properties.**—A powerful vaso-constrictor and cardiac tonic. It is of the greatest value in cases of sudden cardiac failure. An extract of the glands was first used in the treatment of Addison's disease, and numerous early cases are recorded, some showing beneficial effects, and others little or no improvement. The use of the extract has gradually been extended in other directions. It has been used in asthenia, anaemia, cyclic albuminuria, and in diabetes mellitus, in exophthalmic goitre, heart disease and capillary haemorrhages, in hay fever, epistaxis, and nasal catarrh, also in asthma. It has been found

of great service in ophthalmic work as it lessens congestion and hastens absorption. It is useful in inflammatory conditions of the conjunctiva, and its use is also indicated in pannus, iritis, keratitis and acute dacryo-cystitis. It controls haemorrhage in ophthalmic, nasal and obstetric work.

Applied locally it is a powerful astringent and haemostatic. 1 drop of a 1 in 50,000 aqueous solution of the active principle blanches the normal conjunctiva within 1 minute. Of the dry extract 5 milligrammes per kilo of body weight is sufficient to produce a maximum effect and about  $\frac{1}{800}$  of a grain of the active principle is sufficient to produce a distinct effect upon the heart and arteries of an adult man. It has been recommended in Grave's disease, and as an adjunct to the treatment of lupus by the Finsen light. Administration by the mouth has not in some cases been found to be so efficacious as intravenous or subcutaneous injection. For cases of cardiac failure, it is best given intravenously, injections of  $\frac{1}{200}$  to  $\frac{1}{100}$  grain of Adrenalin being given. Subcutaneous injections of  $\frac{1}{1000}$  to  $\frac{1}{500}$  grain are recommended in ophthalmic practice to be used immediately before operation.

For introduction into the nose and ear, a 1 in 5000 solution of the active principle is used, or a 5 p.c. solution of the Extract. As an ointment 1 of Liquid Extract to 7 of Lanolin Ointment; as a suppository containing 2 or 3 minims of Liquid Extract.

5 to 20 minims of solution given every six hours in the treatment of neurotic heart.—*B.M.J.* '04, i. 1009.

Various preparations of the dried gland, of the extract (solid and liquid), and of the active principle have been introduced for medicinal use. The following include the best-known preparations:—

**GLANDULÆ SUPRARENALES** (sicc. pulv.).—A dry, light brown or drab amorphous powder. Partially soluble in Water. 1 part represents about 5 of the fresh gland.

**Dose.**—5 grains = 0·32 grammes. Also supplied in tablets containing 0·1 grammes =  $1\frac{1}{2}$  grains.

**DESICCATED SUPRARENALS** (Suprarenal Capsules of the Sheep).—A light fawn-coloured, or light brownish-yellow powder; 1 grain of the powder representing 8 grains of the fresh Suprarenals. Dose, 1 to 3 grains = 0·06 to 0·18 grammes.

**Desiccated Suprarenal Gland Tablets.**—Each tablet containing 2 grains of the desiccated gland.

**TABLOID SUPRARENAL GLAND.**—Each tabloid represents 5 grains of the gland.

**EXTRACTUM GLANDULÆ SUPRARENALÆ HÆMOSTATICUM.**—A brown, or dark brown, hygroscopic, amorphous powder, readily soluble in Water. It is a very active preparation of the gland.

**Dose.**—1 to 3 grains = 0·06 to 0·2 grammes.

**Extractum Glandulæ Suprarenalæ Liquidum.**—A Liquid Extract, 1 part of which is equal to 1 of fresh gland.

**LIQUOR SUPRARENALIS HÆMOSTATICUS.**—A pale brownish or pinkish-brown liquid, containing the entire active principle of the gland. It has been used with great success as a spray in the treatment of hay fever, coryza, etc.

**ADRENALIN.**—A light white, or almost white, micro-crystalline powder, possessing a slightly bitter taste, and leaving a feeling of numbness on the tongue. Soluble with difficulty in cold Water, and more readily in hot Water. It forms non-crystallisable salts.

It possesses the physiological activity of the gland, but in a very much enhanced degree. It is the strongest hæmostatic known. It is in the form of dilute solution of this active principle that it is now generally used medicinally. The Hydrochloride Sulphate and Benzoate have been prepared.—*A.J.P.* '01, 523.

**ADRENALIN CHLORIDE SOLUTION.**—A transparent, almost colourless liquid, containing 1 part of Adrenalin Chloride, and 5 parts Chloretone in 1000 parts of Normal Saline Solution.

For nasal, aural and ophthalmic use it may be diluted to form a 1 in 2000, a 1 in 5000, or a 1 in 10,000 solution.

**Dose.**—5 to 30 minims = 0·3 to 1·8 c.c. for internal administration.

**EPINEPHRIN.**—A white, or greyish-white powder, which is regarded by Abel and Crawford as the active principle of the Suprarenal gland.

Its chemical constitution has been recently investigated by Dr. Jowett.—*B.M.J.E.* '99, i. 35; *P.J.* '03, i. 1; '04, i. 247.

**SUPRARENALIN.**—A light yellow, stable non-hygroscopic crystalline powder. Slightly soluble in cold Water and in Alcohol. It is stated to possess all the therapeutic properties of the Suprarenal Capsules.

Teaspoonful doses of 1 in 5000 solution of Suprarenalin in pulmonary hæmoptysis.—*B.M.J.* '04, i. 365.

**Suprarenalin Solution.**—A slightly alkaline stable solution, containing 1 of Suprarenalin in 1000.

**RENAGLANDIN.**—A light brown syrupy liquid. It is stated to be a concentrated and aseptic fluid extract of Suprarenal gland. Each fluid drachm is equivalent to 5 grains of the fresh gland.

**RENALINE (French).**—A greyish-white crystalline powder, only slightly soluble in cold Water, more readily soluble in warm Water. It gradually darkens in colour when exposed to the air and light. It forms definite salts with the Acids; the chief salt being Hydrochloride. It is also sold in the form of a 1 in 1000 solution and in glass capsules containing 1, 2 and 5 c.c. of a sterilised solution (1 in 1000, 1 in 2000 or 1 in 10,000).

General references.—*L.* '01, ii. 488, 1752; '02, i. 21, 455, 687, 816, 1089; '02, ii. 115, 1200, 1232, 1500, 1512, 1775; *B.M.J.* '01, ii. 1527, 1596; '02, i. 200, 266, 302, 452, 587, 654, 707, 1252, 1535; '03, i. 421, 849; *B.M.J.E.* '01, ii. 16; '02, i. 9, 83, 142; '03, i. 60; *T.G.* '02, 33; *J.C.S.* '01, *Abs.* ii. 673; '02, *Abs.* i. 68; *P.J.* '01, i. 361; '01, i. 361; '01, ii. 384; '04, i. 247; *C.D.* '01, ii. 1048.

**NEBULA EXTRACTI SUPRARENALIS.**—Suprarenal Extract, 48 grains; Sodium Sulphate, 10 grains; Boiling Distilled Water to 1 fl. oz. = 10 p.c. solution.—*Central Throat.*

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## SYRUPI.

### SYRUPS.

Syrups are apt to ferment or become mouldy when made with too little Sugar, and to crystallise when too concentrated, or when mixed with Acids or Alcohol. There is no uniformity in the method given in B.P. for the twenty-two Syrups which are Official. In seven of them the final product is directed to be made to a given volume by the addition of Water or of Syrup, and in three of them to a given weight. The sp. gr. is mentioned in two of them, Syrupus, and Syrupus Ferri Iodidi. In the case of Syrupus Sennæ and Syrupus Tolutanus, the fluid is made up to a given volume by the addition of Distilled Water before the Sugar is dissolved in it, but in Syrupus Hemidesmi, Syrupus Rosæ and Syrupus Scillæ no such precaution is taken. Syrupus Aurantii and Syrupus Zingiberis are both mixtures of a Tincture with Syrup, but the latter is made up to a definite volume, the former is not.

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### Not Official.

## TABACI FOLIA.

### LEAF TOBACCO.

The dried Leaves of the Virginian Tobacco, *Nicotiana Tabacum*. Official in B.P. '85, but now omitted.

When dry they yield about 20 p.c. of ash, containing a large proportion of Potassium Carbonate.

The Virginian leaf contains about 6 p.c. of **Nicotine**, and is one of the strongest varieties of tobacco.

**Medicinal Properties.**—A powerful depressant, especially affecting the heart and respiration. Smoked, it is sedative and antispasmodic in various cases of asthma. Occasionally used as snuff for its errhine action, increasing the flow of nasal mucus.

It forms the basis of a proprietary article for the relief of neuralgia of the face.

Nicotine is one of the most powerful and rapid poisons known.

**Tobacco-juice** (a strong infusion) is a powerful insecticide, but some preparations for this purpose contain Arsenic in addition to the Tobacco, and in a case that came under our notice, several animals were killed by the Arsenic.

**Antidotes.**—In case Tobacco has been swallowed, an emetic; stimulants internal and external. Recumbent position; Tannic Acid; Nux Vomica or Strychnine.

**Official in** Belg., Fr., Ger., Mex., Norw., Port., Span. and Swiss, Folia Nicotiana ; U.S., Tabacum.

**NICOTINA** ( $C_{10}H_{14}N_2$ , eq. 160·98).—A nearly colourless, volatile, oily liquid, sp. gr. 1·011, with an acrid, burning taste, inflammable, miscible with Water, Ether, Alcohol, and the fixed Oils. On exposure to air it becomes darker in colour, and eventually resinifies. To this alkaloid Tobacco owes its activity. The most easily crystallised salt is the Acid Tartrate. Nicotine is intensely poisonous, and is seldom, if ever, used therapeutically.

**NICOTINÆ SALICYLAS** (Eudermol).—Colourless, transparent crystals, or a white, crystalline powder, possessing a faint empyreumatic odour. It is soluble in Water and in Alcohol (90 p.c.). It has been introduced as a remedy for scabies, used in the form of a 1 p.c. ointment made with Vaseline or Lanolin.—*B.M.J.E.* '99, ii. 47 ; *P.J.* '99, i. 227.

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## TAMARINDUS.

### TAMARINDS.

The Fruits of *Tamarindus Indica*, freed from the brittle outer part of the pericarp and preserved with Sugar.

Imported from the West Indies.

**Medicinal Properties.**—Refrigerant and slightly laxative. Infused with Water, forms a cooling drink in febrile affections ; it may also be given with Milk to form Tamarind Whey (1 Pulp in 40).

**Dose.**— $\frac{1}{4}$  oz. = 7·1 grammes and upwards.

**Official Preparation.**—Contained in *Confectio Sennæ*.

**Official in** all the Foreign Pharmacopœias except Dan. ; Ger. (a crude and a strained).

The Tamarind Acid equal to about 10 p.c. (calculated as Tartaric) would take up Copper if such vessels were used.

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## TARAXACI RADIX.

### TARAXACUM ROOT.

The fresh and the dried Roots of *Taraxacum officinale*, collected in the autumn.

**Medicinal Properties.**—A mild laxative and bitter tonic, given in atonic dyspepsia with habitual constipation.

**Official Preparations.**—Extractum Taraxaci, Extractum Taraxaci Liquidum, and Succus Taraxaci.

**Not Official.**—Liquor Taraxaci.

**Official in** all the Foreign Pharmacopœias except Norw. ; Fr., Pissenlit ; Ital., Tarassaco ; Mex., Diente de Leon.

**EXTRACTUM TARAXACI.** EXTRACT OF TARAXACUM.

Crush fresh Taraxacum Root; press out the juice; allow the feculence to subside; heat the liquid to 212° F. (100° C.), and maintain the temperature for ten minutes; strain; evaporate to the consistence of a soft extract.

**Dose.**—5 to 15 grains = 0·32 to 1 grammie.

Official in Ital. and U.S., from **fresh root**; Swiss, from **dried root**; Fr., from **dried leaves**; Austr., Belg., Dan., Dutch, Ger., Hung., Port., Russ. and Swed., from **whole plant**; Jap., from **whole plant dried**; Mex., from **root and leaves**; Span., clarified juice of **fresh leaves** evaporated, also aqueous from **dried leaves**.

**EXTRACTUM TARAXACI LIQUIDUM.** LIQUID EXTRACT OF TARAXACUM.

Macerate 20 of Taraxacum Root in 40 of Alcohol (60 p.c.) for 48 hours; press out 10 of liquid; add to the pressed residue 40 of Distilled Water; macerate for 48 hours, press out the liquid, strain and evaporate to 10; mix this with the former 10 to make the total measure 20; filter.

When made in this way it deposits greatly. A much better Fluid Extract is made by percolation with Alcohol (30 p.c.).

**Dose.**—½ to 2 fl. drm. = 1·8 to 7·1 c.c.

Official in Russ. and U.S.

**SUCCUS TARAXACI.** JUICE OF TARAXACUM.

3 of the expressed Juice from bruised fresh Taraxacum Root, mixed with 1 of Alcohol (90 p.c.); after seven days, filter.

**Dose.**—1 to 2 fl. drm. = 3·6 to 7·1 c.c.

Not Official.

**LIQUOR TARAXACI.**—A preparation resembling the Succus, but in which the Alcohol (90 p.c.) is added directly to the bruised root before pressing. Introduced many years before the Succus and superior to it. The opinion (*C.D.* '92, i. 612) is wrong that Liquor in this case is synonymous with Fluid Extract, since the root depreciates considerably in the drying, before powdering.

**TEREBENUM.**

TEREBENE.

A transparent, colourless, mobile, optically inactive liquid, sp. gr. 0·862 to 0·866. It is prepared by removing the optically active constituents from Oil of Turpentine by treatment with Sulphuric Acid and redistillation. It is Officially stated to be a mixture of Dipentene and other Hydrocarbons. It

should be kept in well-stoppered bottles away from the light.

**Solubility.**—1 in  $6\frac{1}{2}$  of Alcohol (90 p.c.); in all proportions of Absolute Alcohol or Chloroform; 1 in  $3\frac{3}{4}$  of Ether; 5 in 8 of Glacial Acetic Acid; very sparingly in Water.

**Medicinal Properties.**—Antiseptic. A stimulating, disinfecting, expectorant in winter-cough (chronic bronchitis). It can be used as an inhalation, mixed with Magnesium Carbonate and hot Water, or from an antiseptic respirator.—*B.M.J.* '86, i. 259, 392; '87, i. 796; *P.J.* (3) xvi. 611. In phthisis, *Pr.* liii. 275.

**Dose.**—5 to 15 minims = 0·3 to 0·9 c.c.

**Prescribing Notes.**—*Small doses may be taken on sugar. It may be given in mixture suspended with Mucilage of Gum Acacia, in flexible capsules, lozenges or pastils.*

**Not Official.**—Vapor Terebenæ, Terpene Hydrate, and Terpinol.

Official in Dutch Supp., Russ. and U.S.

#### Not Official.

**VAPOR TEREBENÆ.**—Pure Terebene, 40 minims; Light Magnesium Carbonate, 20 grains; Distilled Water to 1 oz.—*Throat and Central Throat.*

**TERPENE HYDRATE.**—Colourless, glistening, rhombic prisms, or a crystalline powder, possessing a faint aromatic odour, and a somewhat bitter taste.

**Solubility.**—1 in 280 of Water; 1 in 14 of Alcohol (90 p.c.); 1 in 46 of Alcohol (60 p.c.).

Used as an expectorant to reduce secretion in bronchitis and other respiratory disorders.—*Pr.* liv. 383.

**Dose.**—3 to 10 grains = 0·2 to 0·65 grammes.

Official in Dutch Supp., Fr., Ger., Ital., Mex., Norw., Russ., Swed., Swiss and U.S.

**TERPINOL.**—A colourless, or nearly colourless liquid, possessing a strong hyacinthine odour. It is a mixture of Terpenes with variable proportions of **Terpineol**. It has a tendency to thicken and darken on exposure to air and light. It is practically insoluble in Water, but soluble in Alcohol (90 p.c.) and in Ether.

Official in Fr. Supp.

**Dose.**—2 minims = 0·12 c.c.

## TEREBINTHINA CANADENSIS.

CANADA TURPENTINE.

*B.P. Syn.*—CANADA BALSAM.

A clear, pale yellow, or greenish-yellow, slightly fluorescent,

viscous balsam, possessing a terebinthinate odour and a somewhat bitter taste. It is Officially described as the oleo-resin obtained from *Abies balsamea*.

By long exposure to air at the ordinary temperature, or quickly when heated, it loses about 25 p.c. of its weight of volatile Turpentine, and forms a hard brittle solid, which, dissolved in Benzol, Toluol, or Xylol, is much used as a medium for mounting microscopical objects, and as a cement for glass; it is also used in its natural state for the same purposes.

**Solubility.**—Soluble in all proportions of Benzol, Chloroform and Ether; 1 in 3 (*or less*) of Absolute Alcohol; 1 in 1 (*or less*) of Alcohol (90 p.c.).

Seldom used internally; its medicinal properties are similar to those of Oleum Terebinthinæ.

It is used in the preparation of Collodium Flexile.

**Official in U.S.**

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#### Not Official.

#### TEREBINTHINA CHIA.

##### CHIAN TURPENTINE.

An oleo-resin obtained from the incised trunk of *Pistacia Terebinthus*, collected in Scio. A soft solid with a characteristic odour. When treated with its own weight of Absolute Alcohol or Pure Ether, the greater portion is dissolved.

Was recommended in the treatment of cancer.—*L.* '80, i. 477; '87, ii. 1005, 1144, 1190, 1244.

**Dose.**—5 to 10 grains = 0·32 to 0·65 gramme.

**Official in Fr., Port. and Span.**

**PILULA TEREBINTHINÆ CHIÆ.**—Chian Turpentine, 6 grains; Sublimed Sulphur, 4 grains. To be made into 2 pills, and taken every four hours.

A case is reported of these pills forming a compact mass in the bowel, removed by enemas.—*C.D.* '90, ii. 75.

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#### TEREBINTHINÆ OLEUM.

##### OIL OF TURPENTINE.

A transparent colourless or nearly colourless limpid liquid, sp. gr. 0·860 to 0·880; distilled from the oleo-resin (Turpentine) obtained from *Pinus sylvestris* and other species of *Pinus*; and rectified if necessary.

The Oil of Turpentine sold in Britain is almost wholly imported from America, and is the product (mainly) of *Pinus australis* and *P. Taeda*. German and Russian Oil is principally

distilled from *P. Sylvestris*; French Oil from *P. Maritima*. Hungarian Turpentine is distilled from the cones of *P. Pumilio*, and Carpathian Turpentine from *P. Cembra* or *P. Pumilio*.

Oil of Turpentine, especially Russian, when exposed to the continuous action of atmospheric air in presence of water, develops a large quantity of Hydrogen Peroxide, Camphoric Acid, and other oxygenated products, which form the basis of the 'Sanitas' series of disinfectants.

Oil of Turpentine dissolves Beeswax, Iodine, Sulphur, Phosphorus, Fixed Oils; also Resins, forming varnishes.

**Solubility.**—1 in  $6\frac{1}{2}$  of Alcohol (90 p.c.); in all proportions of Absolute Alcohol, Carbon Bisulphide, Chloroform, Ether sp. gr. 0·720, and Glacial Acetic Acid.

**Medicinal Properties.**—Antiseptic, expectorant, haemostatic, diuretic, anthelmintic. Useful in passive haemorrhage from the various organs; 4 fl. dram. along with an equal quantity of Castor Oil is often successful in removing tape-worm. Antispasmodic in hysterical affections and in hiccough; it is said to dissolve gall-stones. In small doses (2 to 10 minims), and in large doses (3 to 4 fl. dram.), it does not usually tend to irritate the kidneys, but in doses of about 1 fl. dram. it is apt to do so. Used as an inhalation in chronic bronchitis and other lung diseases; as an enema with Castor Oil for obstinate constipation, for flatulence and tympanitic distension of the bowels, and in threadworm. Externally rubefacient and counter-irritant; employed as a liniment in chronic inflammation and rheumatism.

Flies and gnats are kept away by the odour of Turpentine.

**Dose.**—2 to 10 minims = 0·12 to 0·6 c.c.; as an anthelmintic, 3 to 4 fl. dram. = 10·6 to 14·2 c.c.

**Prescribing Notes.**—Usually given in the form of mixture suspended with Mucilage or Powder of Gum Acacia. It may be given in *Mistura Amygdalæ*. It is also given in capsules. 1 fl. dram. of Mucilage, with diligent trituration; renders  $\frac{1}{2}$  fl. dram. of Oil of Turpentine emulsive with 1 fl. oz. of Distilled Water.

30 grains Powder of Gum Acacia rubbed first with 1 fl. dram. of Oil of Turpentine, then with 1 fl. dram. of Water, and lastly triturated whilst adding gradually 1 fl. oz. Distilled Water, makes a good emulsion.

**Official Preparations.**—Linimentum Terebinthinæ and Linimentum Terebinthinæ Aceticum. Used in the preparation of Terebenum.

**Antidotes.**—Emetics, Epsom Salts, demulcent drinks, Morphine or Laudanum to relieve pain.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

**LINIMENTUM TEREBINTHINÆ.** LINIMENT OF TURPENTINE.

Dissolve 1 of Camphor in 13 of Oil of Turpentine and add them gradually to a mixture of  $1\frac{1}{2}$  of Soft Soap in 2 of Distilled Water with constant trituration until a cream is produced, and add Distilled Water *q.s.* to yield 20.

(about 1 in  $1\frac{1}{2}$ )

Formula entirely altered.

Official in U.S., Resin Cerate 65, Oil of Turpentine 35.

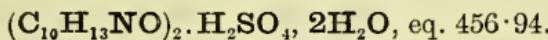
**LINIMENTUM TEREBINTHINÆ ACETICUM.**  
LINIMENT OF TURPENTINE AND ACETIC ACID.

Oil of Turpentine, 4; Glacial Acetic Acid (by weight), 1; Liniment of Camphor, 4. (about 1 in 2)

An imitation of St. John Long's celebrated Liniment.

Official in Swed. (Linimentum Terebinthinæ Acetatum), 9 Oil in 20; Swiss (Linimentum Terebinthinæ Compositum), about 3 Oil in 10.

Not Official. |

**THALLINÆ SULPHAS.**

A yellowish-white crystalline powder, with an odour resembling that of Coumarin, and an aromatic bitter taste.

The Sulphate of a synthetically-prepared base derived from Chinoline, the full name of which is Tetrahydroparaquinanisol or Tetrahydroparamethyloxychinolin.

The free base is precipitated from solutions by Caustic Alkali, and from it are obtained the Iodide and other Iodinated compounds (*e.g.* Periodotetrahydroparamethyloxychinolinum) which have been used in the treatment of cancer.

**Solubility.**—1 in 7 of Water.

**Medicinal Properties.**—Antipyretic and antiseptic. Has been recommended internally in typhoid and other fevers.—*L.* '84, ii. 1018; *L.M.R.* '85, 456; *B.M.J.* '87, ii. 1438.

For gonorrhœa, an injection  $2\frac{1}{2}$  grains in 150 minims of Water; a bougie 2 grains in 40 grains of Cacao Butter.—*B.M.J.* '87, ii. 1438; *L.M.R.* '87, 162.

Adverse results in gonorrhœa.—*B.M.J.* '89, i. 1458.**Dose.**—3 to 8 grains = 0.2 to 0.52 gramme.

Official in Dutch Supp.

Cereoli (Antrophores) are medicated bougies containing a spiral spring wound with fine wire, and coated first with an insoluble layer of White Gelatin, and then with a diluted Mucilage. They are sometimes medicated throughout and sometimes only medicated externally.

No special medicament is specified in the *Ph. Ger.*, but they may be medicated in any desired manner.

Antrophores of the salt, described above, have been found useful in the treatment of gonorrhœa.

## THEOBROMATIS OLEUM.

OIL OF THEOBROMA.

B.P. *Syn.*—CACAO BUTTER.

A pale yellow or whitish yellow fatty solid, having a characteristic odour of Cocoa and a bland agreeable taste. It is Officially described as a concrete Oil obtained by pressing the warm crushed seeds of *Theobroma Cacao*.

**Official Preparations.**—Contained in all the Suppositories except Glycerin.

**Not Official.**—Theobromina, Theobrominæ Salicylas, Diuretin and Theocin.

**Official in Austr., Belg., Dan., Dutch, Ger., Hung., Jap., Norw., Russ., Swed. and Swiss.** Oleum Cacao; Fr., Beurre de Cacao; Ital., Burro di Cacao; Mex., Manteca de Cacao; Port., Oleo de Cacao; Span., Aceite de Cacao; U.S., Oleum Theobromæ.

It has been shown (*C.D.* '89, i. 800) that a large number of substances used in the form of suppositories caused the melting point of the mixture to be several degrees higher than the base employed.

Cocoanut Stearin is sometimes a better substance than Cacao Butter for making suppositories. See p. 601.

### Not Official.

**THEOBROMINA** ( $C_7H_8N_4O_2$ ).—White crystalline powder, appearing under the microscope as trimetric needles. Soluble 1 in 1700 of Water, 1 in 5000 of Alcohol (90 p.c.). It is the alkaloid contained in the Cacao seeds. It is the lower homologue of Caffeine, and has a similar physiological action but stronger. It is much less soluble in water than Caffeine, and acts the part of a weak Acid forming compounds with alkalis. The seeds contain 1 to 2 p.c. of the alkaloid.

Diuretic, acting most efficiently in cases of cardiac disease.—*T.G.* '93, 767; *B.M.J.E.* '93, ii. 104. Considered in many respects superior to Diuretin.—*Pr.* li. 299. Diuresis may be prolonged by the subsequent administration of Digitalin ( $\frac{1}{2}$  grain and  $\frac{1}{4}$  grain).—*T.G.* '96, 330; *L.* '96, i. 205; ii. 1820; *P.J.* '95, ii. 391.

**Dose.**—5 to 10 grains = 0.32 to 0.65 grammes.

**Official in Austr. Add., Dutch Supp. and Swed.**

Theobrominæ Salicylas is stated to be far more stable than the double salt (Diuretin), the latter being decomposed even by Carbonic Acid.—*P.J.* '96, i. 161.

**DIURETIN** (Sodium Theobromine Salicylate).—A white odourless unstable powder; soluble 1 in 1 of cold Water, also soluble in Alcohol; insoluble in Chloroform and in Ether. Cardiac tonic and diuretic. Useful in both chronic and acute Bright's disease.—*B.M.J.E.* '93, ii. 80; '94, ii. 71; *L.* '96, i. 1132; '98, i. 1621; *Pr.* lvi. 319.

**Dose.**—10 to 20 grains = 0·65 to 1·3 grammes, thrice daily.

*Ph. Ger.* maximum single dose, 1 gramme; maximum daily dose, 6 grammes.

**Official in Austr. Add., Dutch Supp., Ger., Ital. and Swed.**

**THEOCIN** (Dimethylxanthine).—Colourless or white crystalline needles possessing a bitter taste; soluble 1 in 190 of Water, 1 in 80 of Alcohol (90 p.c.), forming Potassium and Ammonium compounds which are readily soluble. It is a synthetic alkaloid, and is identical in composition with **Theophylline**, the alkaloid occurring with Theine or Caffeine in tea. It has been introduced as a diuretic. It has been used in kidney disorders with general dropsy, and appears to be most efficient when considerable oedema exists.—*B.M.J.E.* '03, ii. 39, 56; *A.J.P.* '03, 27; *C.D.* '03, i. 50; *P.J.* '03, i. 2.

**Dose.**—3 to 6 grains = 0·2 to 0·4 grammes.

It is also supplied in tablet form, each tablet containing 4 grains = 0·26 grammes.

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## THUS AMERICANUM.

### FRANKINCENSE.

A softish, pale, opaque solid, possessing an agreeable terebinthinate odour. On keeping it hardens and forms a translucent brittle solid. It is Officially described as the concrete oleo-resin which is scraped off the trunks of *Pinus palustris* and *Pinus Taeda*.

From the Southern States of North America.

**Solubility.**—Almost wholly soluble 1 in 1 of Alcohol (90 p.c.); entirely 4 in 3 of Ether.

**Medicinal Properties.**—Used externally for the same purposes as Resin.

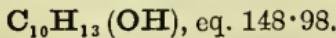
**Official Preparation.**—Used in the preparation of *Emplastrum Picis*.

**Official in U.S.**

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## THYMOL.

### THYMOL.



Large, colourless translucent oblique rhombic prisms,

having a characteristic, somewhat agreeable, thyme-like odour, and burning aromatic taste. It is a crystalline Phenol obtained from the volatile Oils of *Thymus vulgaris*, *Monarda punctata*, and *Carum Copticum*.

**Solubility.**—1 in 1500 of Water ; 1 in 190 of Glycerin ; 8 in 3 of Alcohol (90 p.c.) or Ether ; 8 in 5 of Chloroform ; 1 in 6 of Petroleum Spirit ; 1 in 3 of Oil of Turpentine ; 1 in 2 of Olive Oil ; 4 in 3 of Glacial Acetic Acid ; 1 in 6 of Solution of Potassium Hydroxide.

**Medicinal Properties.**—A saturated solution in Water is a very powerful antiseptic; used as an intestinal antiseptic in diarrhoea and typhoid. As an ointment or soap in parasitic skin diseases. As an inhalation in laryngitis and bronchial affections ; and for many other conditions in which Carbolic Acid is useful. It is a very powerful deodorant, and is a local anaesthetic.

In ankylostomiasis, no vermifuge is comparable to it. 10 to 60 grains for fairly robust patients, not more than 10 grains for those who are very ill, or much advanced in years.—*B.M.J.* '03, i. 720.

Usually employed as a deodorant, which property it possesses to a marked degree ; its aqueous solution is very useful in a night commode, and an extremely small quantity of it will keep urine, when it is required to make a twenty-four hours collection for analytical purposes.

**Dose.**—½ to 2 grains = 0·032 to 0·13 grammes.

**Not Official.**—Liquor Thymol, Thymol Antiseptic Dressings, Unguentum Thymol, Vapor Thymol, Oleum Thymi, Carvacrol Iodide and Thymol Carbonate.

**Official** in Austr., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Russ., Span., Swed., Swiss and U.S.

### Not Official.

**LIQUOR THYMOL.**—Thymol, 1; Alcohol (90 p.c.), 100. This solution is very useful, as it may be diluted to any extent with Water without precipitation. Half a pint diluted to a gallon is about the same strength as a saturated aqueous solution.

**Liquor Antisepticus (Volckmann).**—Thymol, 1; Alcohol (90 p.c.), 10; Glycerin, 20; Distilled Water, 100.

**THYMOL ANTISEPTIC DRESSINGS.**—Gauze, 5 p.c., and Wool, 5 p.c.

**UNGUENTUM THYMOL.**—Thymol, 20 grains; Soft Paraffin, 1 oz.—London.

**VAPOR THYMOL.**—Thymol, 6 grains; Alcohol (90 p.c.), 60 minims; Light Magnesium Carbonate, 3 grains. Water to 1 fl. oz.—Throat.

A teaspoonful in a pint of Water at 140° F. for each inhalation.  
A strong stimulant and disinfectant.

**OLEUM THYMI.**—The rectified Oil forms an almost colourless or yellow oily liquid, sp. gr. 0·900 to 0·930, having a pleasant aromatic thyme-like odour and sharp aromatic taste. The crude Oil is a reddish or reddish-brown oily liquid possessing similar characteristics of taste and odour. It is the Oil distilled, principally from the fresh flowering herb, *Thymus vulgaris*. Should contain from 25 to 35 p.c. of Phenols (Thymol and Carvacrol). The rectified Oil soon darkens in colour on exposure to air and light, and should be preserved in well-stoppered bottles of a dark actinic tint.

**Official in Fr., Ger., Russ., Swiss and U.S.**

**CARVACROL IODIDE.**—A light yellow or reddish-brown powder, insoluble in Water and Alcohol, but soluble in Ether and in Chloroform, produced by the action of Iodine and Potassium Iodide on Carvacrol in solution.

As a germicide it is stated to be 5 times more powerful than Iodoform, and being more bulky is better adapted as a dusting powder. The substance which we prepared for many years at the suggestion of Dr. Mortimer Granville is of a reddish-brown colour, but more recently a substance of a light yellow colour has been used in Germany as a substitute for Iodoform.

**Iodocrol**, a fancy name applied to the latter product.

**THYMOL CARBONATE** (Tyratol).—Forms a tasteless white powder. It has been recommended as a powerful vermifuge.—*C.D.* '01, ii. 344.

## THYROIDEUM SICCUM.

### DRY THYROID.

A pale buff-coloured to light brown, somewhat hygroscopic amorphous powder, possessing a peculiar characteristic meat-like odour. It is prepared from the fresh healthy thyroid glands of the sheep, the extraneous tissue being first removed, the glands then finely divided, dried at a temperature below 40° C. (104° F.), preferably in a vacuum, the dry powdered product finally freed from fat by exhaustion with Petroleum Ether, and the residue re-dried.

**Medicinal Properties.**—Has been used with success in the treatment of myxoedema and certain forms of insanity, obesity, goitre and cretinism, psoriasis and chronic scaly skin diseases.—*B.M.J.* '91, ii. 796, 798; '92, ii. 449, 613, 894, 940, 1386; '93, i. 737; ii. 217; '96, ii. 1641; '98, ii. 142; '99, i. 1460; ii. 877; '03, i. 660; *L.* '92, ii. 941; '93, i. 580; '94, ii. 846; '95, i. 625; '97, ii. 267; *B.M.J.E.* '94, i. 101; *Pr.* liii, 100.

Preparations.—*B.M.J.* '92, ii. 1384, 1459; *L.* '93, i. 273, 396; in goitre—*L.* '95, ii. 169; *B.M.J.* '95, ii. 75; '96, i. 48; in cancer—*L.* '96, ii. 106, 162; in cretinism—*L.* '96, i. 853, 1446; '97, ii. 853; '02, i. 1565; *B.M.J.* '01, i. 1143; '02, i. 1259; in lupus—*B.M.J.* '94, i. 786; '96, ii. 1200; *L.* '96, ii. 41, 470; in psoriasis—*B.M.J.* '94, i. 186, 617; '95, i. 697; *L.* '95, i. 813; *B.M.J.E.* '95, ii. 35; ichthyosis—*B.M.J.* '95, i. 696; in pityriasis rubra—*B.M.J.* '95, i. 695; in rickets—*B.M.J.E.* '02, i. 40.

Oophorectomy combined with the administration of thyroid has been recommended in the treatment of cases of inoperable carcinoma of the breast, administered in small doses, gradually increased until 15 grains are taken daily.—*B.M.J.* '00, ii. 1161; '01, ii. 1145, 1439; '02, i. 508; *L.* '01, ii. 388, 966, 967; '02, i. 888; *T.G.* '99, 609.

12 p.c. of recoveries for cases of insanity which were not hopeless, but were found to be intractable by ordinary methods. It appears to be more efficacious in women than in men, and the best all-round results were connected with the insanity of child-bearing.—*B.M.J.* '00, ii. 818.

It powerfully affects the metabolism generally of the body cells, raising their tone and improving their vigour.—*B.M.J.* '01, ii. 1147.

A useful general résumé of our knowledge and uses of the Thyroid Extract, forming portion of the Hunterian Oration on Organo-Therapeutics.—*L.* '02, i. 1091.

In puerperal eclampsia, 5 grains thrice daily for 6 days, followed by 5 grains every three hours for 17 days, an interval of 14 days, and then doses of 5 grains daily.—*B.M.J.* '02, i. 1214; *L.* '02, i. 824; ii. 459; '03, i. 307.

10 grains given in each case on admission, and 5 grains every 4 hours afterwards in the treatment of puerperal eclampsia.—*L.* '04, i. 1057; *B.M.J.* '04, i. 895.

In psoriasis.—Initial dose should not exceed 5 grains once daily, and increment should be gradual and spread over two or three weeks, and should seldom exceed 15 grains a day, not giving more to patients who are not daily under observation.—*B.M.J.* '03, i. 656; *L.* '03, i. 785.

In glycosuria,  $1\frac{1}{2}$  grains in tablet form given three times a day. *L.* '03, ii. 187.

**Dose.**—3 to 10 grains = 0·2 to 0·65 grammes.

**Official Preparation.**—Liquor Thyoidei.

**Not Official.**—Elixir Thyoidei, Liquor Thyoidei, Tablets Thyroid Gland, Iodothyron and Thyroglandin.

### LIQUOR THYROIDEI. THYROID SOLUTION.

A liquid prepared from the fresh and healthy Thyroid gland of the sheep.

This preparation does not appear to be a success pharmaceutically, as it readily undergoes decomposition. The menstruum is

equal parts of Glycerin and Distilled Water, containing about 1 of Phenol in 400 of the total volume.

Glycerin is stated not to dissolve out Thyoiodin.—*P.J.* '98, ii. 167; *C.D.* '98, ii. 288. This statement has been contradicted.—*P.J.* '98, ii. 482. But reaffirmed on strong evidence.—*P.J.* '98, ii. 546.

### Not Official.

**ELIXIR THYROIDEI (Squire).**—A clear reddish liquid, containing the entire active principles of the Thyroid gland. Each fl. dram. is equal to  $1\frac{1}{2}$  grain dry Thyroid.

**Dose.**—1 to 4 fl. dram. = 3·6 to 14·4 c.c.

**ELIXIR THYROIDEI (Armour).**—Prepared with a Glycerin menstruum, 1 fl. oz. equivalent to one entire sheep's Thyroid gland; has also been introduced.

**Dose.**—30 to 60 minims = 1·8 to 3·6 c.c.

**LIQUOR THYROIDEI (Squire).**—A transparent, pale reddish liquid, containing the entire active principles of the gland. Each fl. dram. is equal to 6 grains of dry Thyroid.

**Dose.**—10 to 60 minims = 0·6 to 3·6 c.c.

**TABLETS OF THYROID GLAND.**—Each tablet containing the equivalent of  $1\frac{1}{2}$ ,  $2\frac{1}{2}$  5 or 10 grains of the entire substance of the Thyroid gland. Tablets, each containing 5 grains, equivalent to 2 grains of the desiccated substance.

**IODOHYDRIN (Thyoiodin).**—An amorphous light brown powder, insoluble in Water, soluble in Alcohol. Dissolved by alkalis and again precipitated on the addition of an acid. It is an organic compound of Iodine, constituting the active principle of the Thyroid gland. Usually standardised by dilution with Milk Sugar, to contain a definite percentage of Iodine.—*L.* '96, i. 592, 666, 941; '97, ii. 855; *B.M.J.* '96, i. 722; *B.M.J.E.* '96, ii. 59; '97, ii. 8; *P.J.* '96, i. 161; ii. 215, 388; '97, i. 287.

**THYROGLANDIN.**—A light yellowish-brown or brown somewhat hygroscopic amorphous powder which is stated to consist of the entire active constituents of the gland. It contains the Iodo-globulin obtained from the fresh glands by simple treatment with Water, together with the total amount of Iodothydrin obtained by subsequent treatment of the residual glands with 1 p.c. Soda Solution and exact neutralisation with Hydrochloric Acid.—*P.J.* '98, ii. 167, 654; *C.D.* '98, ii. 288, 970; *B.M.J.* '98, ii. 79.

**Dose.**—1 to 5 grains = 0·06 to 0·32 grammes.

## TINCTURÆ.

### TINCTURES.

Most of the Tinctures of the British Pharmacopœia are directed to be made either by 'maceration' or by 'percolation'; the number in each class is nearly equal, but the latter predominate;

about a dozen are made by simple solution, or mixing the ingredients.

The Official directions for maceration and percolation are much the same as in 1864; for percolation the ingredients are macerated with a portion of the menstruum for 48 hours, and then percolated with more of the same, the marc is pressed and the whole yield of liquid made up to the required volume; for maceration, the ingredients are mixed with the required quantity of menstruum, and after seven days strained, pressed, and if necessary the liquid is filtered; in 1864, 1867, and 1885, the macerated tinctures were finally made up to a volume, but in 1898 this was omitted.

The degrees of comminution appeared first in the 1885 edition.

The following Tinctures are standardised:—Cinchona, Jalap, and Opium; the Tinctures of Belladonna and Nux Vomica are made from standardised Fluid Extracts; Ammoniated Tincture of Opium and Compound Tincture of Camphor are made from standardised Tincture of Opium; Compound Tincture of Cinchona from standardised Tincture of Cinchona.

The strengths of the various Tinctures have been adjusted so as to have a dosage of 5 to 15 minims for the potent Tinctures, and 30 to 60 for the less potent.

Regarding the Foreign Pharmacopœias, it may be noted that Austr., Dan., Dutch, Ger., Russ., Swiss and U.S., standardise Tincture of Opium; Dutch and U.S. prepare their Tincture of Nux Vomica from a standard Extract. Jap. standardises the Tinctures of Cinchona, Nux Vomica and Opium to a weight of alkaloid, and Tincture of Ipecacuanha with Mayer's reagent. Although in Swiss the Tinctures are made to a given weight, yet there is a rough attempt at standardisation of the Tinctures of Aconite, Belladonna, Colchicum, Ergot, Gelsemium, Ipecacuanha, Nux Vomica, and Sabadilla, by directing that a certain quantity of the Tincture shall yield a flocculent precipitate with Mayer's reagent; Tincture of Digitalis should be rendered opaque by Tannic Acid; the details of the operation are given under the several Tinctures. Tincture of Opium is standardised in the usual manner.

**Prescribing Notes.**—*Most of the Tinctures mix readily with Water, but resinous Tinctures under similar circumstances require the addition of Mucilage of Gum Acacia, which is the best all-round emulsifying agent for this purpose. It gives good results with all the Tinctures except Compound Tincture of Benzoin, which is very difficult to diffuse in Water; neither Mucilage of Gum Acacia, nor Mucilage of Tragacanth, by itself, gives a satisfactory emulsion with this Tincture; the best effect is obtained by the use of Compound Tragacanth Powder, 60 grains of which will diffuse 3 fl. drm. of Compound Tincture of Benzoin, in 3 fl. oz. of Water.*

*The quantity of Mucilage required for resinous Tinctures, will depend upon the proportion of Tincture to the Water or other aque-*

ous fluid ; 1 fl. dram. of Mucilage of Gum Acacia is sufficient for 1 fl. dram. of the following Tinectures in 1 fl. oz. of Water :—Benzoin, Cubebs, Ammoniated Guaiacum, or Tolu. The following Tinectures require only about half this quantity—Asafetida, Cannabis Indica, Jalap, Myrrh, or Sumbul. When Tinecture of Hydrastis or Tinecture of Podophyllin, is prescribed with an aqueous solution of mineral salts, it is better to add Mucilage of Gum Acacia. The Mucilage should always be diluted with 3 or 4 times its bulk of Water, before adding the Tinecture.

Mucilage of Tragacanth is also useful for the purpose of diffusing the Resin of the Tinectures, especially for Tinecture of Jalap, and Tinecture of Cannabis Indica when prescribed with salts.

Quinine is sometimes prescribed in mixtures under conditions which cause a precipitation of the alkaloid itself, or one of its sparingly soluble salts ; in such cases, the addition of 2 or 3 fl. dram. of Mucilage of Gum Acacia to the 6 or 8 oz. mixtures will prevent the aggregation of the precipitate which would otherwise occur.

### TINOSPORA.

The dried Stem of *Tinospora cordifolia*, is Official in the *Ind. and Col. Add.* for India and the Eastern Colonies ; also Infusum *Tinosporæ* (1 in 10), dose  $\frac{1}{2}$  to 1 fl. oz. = 14.2 to 28.4 c.c. ; Liquor *Tinosporæ Concentratus* (1 in 2), dose 30 to 60 minims = 1.8 to 3.6 c.c. ; and Tinctura *Tinosporæ* (1 in 5 dose), 30 to 60 minims = 1.8 to 3.6 c.c.

### TODDALIA.

The dried Root-bark of *Toddalia aculeata*, is Official in the *Ind. and Col. Add.* for India and the Eastern Colonies ; also Infusum *Toddaliæ* (1 in 10), dose 1 to 2 fl. oz. = 14.2 to 28.4 c.c. ; Liquor *Toddaliæ Concentratus* (1 in 2), dose 30 to 60 minims = 1.8 to 3.6 c.c.

### TRAGACANTHA.

#### TRAGACANTH.

Thin, translucent, white, or pale yellowish-white odourless flaky shreds or filaments, possessing a somewhat horny appearance. It is a guinny exudation obtained by incision from *Astragalus gummifer*, and some other species of *Astragalus*. Known in commerce as Syrian Tragacanth.

The characteristic of the Syrian Tragacanth is the ribbon-like flakes in which it occurs, and its comparative freedom from Starch.

Pure Tragacanth gives a blue coloration with Iodine, varying in depth in different samples, but in any case it is much too faint to be confounded with added Starch.

**Medicinal Properties.**—Demulcent. Used for the suspension of heavy insoluble powders in liquids; 10 grains of the Compound Powder of Tragacanth are used for each fluid ounce of water.

One part of Tragacanth gives more viscosity to water than 25 parts of Gum Acacia.

**Official Preparations.**—Glycerinum Tragacanthæ, Mucilago Tragacanthæ and Pulvis Tragacanthæ Compositus; contained in Confectio Sulphuris, Mistura Cretæ, Mistura Guaiaci, Pilula Quininæ Sulphatis, and Pulvis Opii Compositus. The Mucilage is contained in Lotio Hydargyri Nigra.

**Not Official.**—Bassorin, Gelanthum and Glucantha.

**Official in Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

#### GLYCERINUM TRAGACANTHÆ. GLYCERIN OF TRAGACANTH.

Tragacanth, in powder,  $\frac{1}{2}$ ; Glycerin,  $1\frac{1}{2}$ ; Distilled Water,  $\frac{1}{2}$ .

Used as a pill excipient, but the following is better for that purpose:—Tragacanth in powder, 1; Glycerin, 6; rub together and keep for two or three days before use to allow it to stiffen.

'Diluted Glucose' is better than either.

#### MUCILAGO TRAGACANTHÆ. MUCILAGE OF TRAGACANTH.

Mix 60 grains of Tragacanth, in powder, with 2 fl. drm. of Alcohol (90 p.c.), in a bottle; add Distilled Water *q.s.* to form 10 fl. oz. and shake immediately. (1 in 74)

#### PULVIS TRAGACANTHÆ COMPOSITUS. COMPOUND POWDER OF TRAGACANTH.

Tragacanth, 1; Gum Acacia, 1; Starch, 1; Refined Sugar, 3. (1 in 6)

**Dose.**—20 to 60 grains = 1·3 to 4 grammes.

**Not Official.**

**BASSORIN.**—Gum Tragacanth, 5; Glycerin, 2; Water, 93.—*St. John's.*

It is also known as *Linimentum Exsiccans*.

It can be medicated with 5 p.c. of Salicylic Acid, Hydronaphthol, or Thioresorcin; with 10 p.c. of Acid Boric, or with 30 p.c. of Ichthyol, Resorcin or Precipitated Sulphur.

**GELANTHUM (Unna).**—A firm basis used in dermatology, consisting of Gelatin, Tragacanth, Glycerin and Water.

**GLUCANTHA.**—Tragacanth in Powder, 240 grains; Water, 240 minimis; Syrup of Glucose, 2 oz. Pill Excipient.—*Guy's.*

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Not Official.

**TRIFOLIUM.**

CLOVER.

A fluid extract is made from the dried Plant, and from this a syrup, a teaspoonful of which 3 or 4 times a day is serviceable in whooping-cough.

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Not Official.

**TRIMETHYLAMINA.**

TRIMETHYLAMINE. PROPYLAMINE.

As supplied in commerce, it is a colourless or pale yellow transparent solution, possessing a strong characteristic odour, and a strongly alkaline reaction. It is miscible with Water and with Alcohol (90 p.c.). It forms crystallisable salts. The Hydrochloride is the one chiefly used in medicine. Pure Trimethylamine is a gas at ordinary temperatures.

**TRIMETHYLAMINÆ HYDROCHLORIDUM** (Propylamine Hydrochloride).—Translucent, colourless, very deliquescent crystals, possessing a strong, characteristic odour; soluble in Water and in Alcohol (90 p.c.). It has been used in rheumatism and gout.

**Dose.**—1 to 5 grains = 0·06 to 0·32 grammes.

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Not Official.

**TRITICUM.**

COUCH GRASS.

The Rhizome of *Agropyrum repens*, gathered in the spring, and deprived of the rootlets.

Under the title **Agropyrum**, it is Official, together with a **Liquid Extract** (1 in 1) in the *Ind.* and *Col. Add.* for Australia, the Eastern and North American Colonies.

**Medicinal Properties.**—Diuretic and uterine sedative.

Official in U.S.; Austr., Belg., Dutch and Swiss, Rhizoma Graminis; Fr. Chien-dent; Mex. and Port., Gramma Franceza.

**DECOCTUM TRITICI.**—Triticum cut small, 1 oz.; Water, 20 fl. oz.; boil ten minutes, and strain when cold.

**Dose.**—4 to 8 fl. oz. = 113·6 to 227·2 c.c. three times a day for cystitis with mucous discharge from the bladder.

Fr. Tisane 1 in 50.

A corresponding preparation, Decoction **Agropyri**, dose,  $\frac{1}{2}$  to 2 fl. oz. = 14·2 to 54·8 c.c., is Official in the *Ind.* and *Col. Add.* for Australia, the Eastern and North American Colonies.

**EXTRACTUM TRITICI LIQUIDUM.**—*Triticum* in No. 20 powder, 10; percolate with Water until exhausted; evaporate the percolate to 15, and add 5 of Rectified Spirit; set aside for 48 hours, filter, and make up to 20 with a mixture of Water 3 and Rectified Spirit 1.

**Dose.**—1 to 6 fl. drm. = 3·6 to 21·3 c.c.

More easily prepared, and without heat (which is very detrimental to the Extract), by percolation with the above diluted Alcohol, so as to obtain 20 of finished product from 10 of the drug.

**Official in U.S.**, 1 in 1.

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### TROCHISCI.

There are several lozenges in the Pharmacopoeia. They are made with four different bases.

The **Simple Basis** consists of 496 of finely powdered Refined Sugar and 19 $\frac{1}{2}$  of Powdered Gum Acacia, made into a paste of 35 $\frac{1}{2}$  of Mucilage of Gum Acacia and a small quantity of Distilled Water.

**Rose Basis** is similar to the above, omitting 17 $\frac{1}{2}$  of the Mucilage of Gum Acacia, and employing Official Rose Water for making the paste.

The **Tolu Basis** is similar to the Simple Basis, substituting 10 $\frac{1}{2}$  of Tincture of Balsam of Tolu and 10 $\frac{1}{2}$  of Distilled Water for a portion of the Sugar.

**Fruit Basis** is similar to the Simple Basis, substituting 56 $\frac{2}{3}$  of Black Currant Paste for the same quantity of Sugar.

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### TYLOPHORÆ FOLIA.

The dried Leaves of *Tylophora asthmatica*, dose,  $\frac{1}{4}$  to 2 grains = 0·016 to 0·13 gramme as an expectorant; 15 to 30 grains = 1 to 2 grammes as an emetic; are Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

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**Not Official.**

**ULEXINE.**

*Syn.*—CYTISINE.

A crystalline alkaloid prepared from *Ulex Europaeus*, the common gorse or furze.

**Solubility.**—Freely soluble in Water and Chloroform; insoluble in Pure Ether.

The Nitrate, Hydrochloride, and Hydrobromide are crystalline salts readily soluble in Water.

**Medicinal Properties.**—Diuretic; useful in cases of dropsy due to heart disease.

**Dose.**— $\frac{1}{2}$  to  $\frac{1}{15}$  grain = 0.0032 to 0.0042 gramme dissolved in 60 minimis of Water.

Ulexine temporarily masks the action of Strychnine.—T.G. '87, 280, 690.

### Not Official.

#### ULMUS.

The dried inner Bark of *Ulmus campestris*.

**Medicinal Properties.**—Bitter, demulcent, tonic and astringent. Given internally for chronic scaly skin diseases, externally as an emollient.

**Official in** Fr., Orme Champêtre and O. Fauve; Port., Olmo; U.S., Ulmus Fulva, Slippery Elm.

**Decoction** Ulmi 1 in 8, dose 2 to 4 fl. oz. = 56.8 to 113.6 c.c. three or four times daily.

**Mucilago Ulmi** (6 of slippery elm in 100) is Official in U.S.

### UNGUENTA.

For the preparation of the Ointments of the British Pharmacopœia, various bases are used, e.g. Soft Paraffin, Hard Paraffin, a mixture of Hard and Soft Paraffins, Lard, Benzoated Lard, Beeswax and Lanolin.

In the case of the ointments containing alkaloids, Oleic Acid is used with the object of dissolving the alkaloid. In India and the Colonies, when the ointment would be too soft, owing to the warmer climate, Indurated Lard, Prepared Suet or Beeswax may be employed for the purpose of stiffening the ointment, provided such admixture does not affect the proportion of active ingredient.

Ointments appear in the Foreign Pharmacopœias, under the following generic titles:—

Austr., Belg., Dan., Dutch, Ger., Hung., Jap., Norw., Russ., Swed., Swiss and U.S., Unguenta.

Fr., Pommades; Ital., Pomata; Mex., Port. and Span, Unguento.

### Not Official.

#### URANIUM NITRATE.

Pale yellow, rhombic crystals, readily soluble in Water. It should be kept in well-stoppered bottles and protected as much as possible from the light.

Has been recommended in the treatment of diabetes.—*B.M.J.* '95, ii. 467; '97, ii. 1044; *Pr. lxi.* 257.

**Dose.**—1 to 5 grains = 0·06 to 0·32 grammes.

The Uranium compounds have lately received a very considerable amount of attention; the metal first gave rise to a suspicion of the existence of a radio-active property in elements, and this suspicion was followed by M. et Madame Curie's discovery of the radio-active element, Radium, in pitchblende.

**RADIUM.**—A lengthy and intricate process for the separation of this radio-active element has been fully recorded by its discoverers, M. et Madame Curie, in a thesis presented to the Faculté des Sciences de Paris, and reprinted in series in the 'Chemical News,' and summarised, *L.* '03, ii. 966. The salt chiefly employed in medicine is the **Radium Bromide**, which is usually supplied in tubes, each containing 0·005 milligramme (about  $\frac{1}{4}$  grain). It is a white salt, but gradually becomes coloured.

The peculiar action of the rays on tissues has been utilised in the treatment of carcinomatous and sarcomatous growths, in epithelioma, psoriasis and lupus.—*L.* '03, ii. 271, 927, 966, 1388; *B.M.J.E.* '03, ii. 31.

Applied to the skin for a period of twenty to forty minutes or longer, in several cases of lupus, rodent ulcer and superficial epitheliomata.—*B.M.J.* '03, ii. 199.

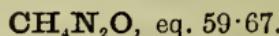
The treatment of consumption by the application of the rays from Radium and Thorium.—*B.M.J.* '03, ii. 197.

It has been discovered in the waters of Bath and Buxton. The deposits from these mineral waters were estimated each to contain about the same amount, the amount in the deposit being relatively much greater than that in solution.—*B.M.J.* '04, i. 797.

17 cases of cancer treated by the application of 30 milligrammes enclosed in a vulcanite capsule covered with talc. It appears that the emanations from Radium can only act upon the rapidly growing cells, and that the older cells, especially if surrounded by fibrous tissue, are less and less easily affected, and if there be an excess of fibrous tissue, the cells are not at all affected.—*L.* '04, i. 1047.

### Not Official.

#### UREA.



Colourless, transparent, almost odourless, somewhat hygroscopic, prismatic crystals, possessing a cool, saline taste. Soluble 1 in 1 of Water; 1 in 7 of Alcohol (90 p.c.).

Introduced as a diuretic, and possesses the property of dissolving uric acid calculi. It has also been recommended in the treatment of tuberculosis.—*L.* '01, i. 694, 1672; '01, ii. 1567, 1709; '02, i. 548; '02, ii. 1383, 1486; '03, ii. 1017; *B.M.J.* '02, ii. 1235.

20 grains three times a day gradually increased to 120 grains three times daily, combined with the application of the X-Rays, in the treatment of lupus vulgaris.—*L.* '02, i. 659.

It is stated to possess the power of dissolving coagulated proteins.—*L.* '02, ii. 527; *P.J.* '03, i. 385.

**Dose.**—20 to 60 grains = 1·3 to 4 grammes, three or four times daily.

Hypodermically it may be given in 40-grain doses dissolved in 4 fl. drm. sterilised Water.

**UROL** (Urea Quinate).—Large, colourless, prismatic crystals, having an acid, bitter taste; readily soluble in Water and in Alcohol (90 p.c.).

It has been recommended in the uric acid diathesis.

**VERONAL** (Diethyl-malonyl Urea).—Colourless, odourless crystals, or a white, crystalline powder, possessing a faintly bitter taste. Soluble 1 in 160 of Water; 1 in 8½ of Alcohol (90 p.c.). Introduced as a hypnotic.—*B.M.J.E.* '03, ii. 51; *C.D.* '03, ii. 1016.

**Dose.**—5 to 20 grains = 0·32 to 1·3 grammes.

In neurasthenic insomnia as well as in sleeplessness following mild pain, 5 to 10 grains; in marked mental excitability, e.g. in alcoholism, delirium tremens, etc., 20 to 50 grains.—*B.M.J.E.* '03, ii. 51.

**Prescribing Notes.**—*It can be made into pills containing 5 grains each, with ½ of its weight of 'Diluted Glucose.'* It can also be dispensed in cachets.

Tablets are supplied containing 7½ grains = 0·5 grammes in each.

### Not Official.

### URETHANE.

Carbaminic Acid Ethyl Ester ( $\text{C}_3\text{H}_7\text{NO}_2$ , eq. 88·43).

Colourless, prismatic crystals, with a peculiar cool taste; free from odour. Melts at 48° to 50° C. Evolves Ammonia when boiled with Solution of Potassium Hydroxide.

**Solubility.**—1 in 2 of Water; 1 in 1 of Alcohol (90 p.c.); 2 in 3 of Ether.

**Medicinal Properties.**—Hypnotic, without anodyne properties.

Possesses a slightly irritant action.—*L.* '99, ii. 72.

**Dose.**—15 to 30 grains = 1 to 2 grammes.

**Official in Swiss and Mex. (Uretano).**

**HEDONAL** (Methyl-propyl-carbinol-urethane).—Colourless crystals, or as a white, crystalline powder, slightly soluble in cold Water, but more readily in hot Water.

Introduced as a hypnotic.

**Dose.**—15 to 30 grains = 1 to 2 grammes, in cachet.

**Somnal.**—Stated to contain Urethane and Chloral Hydrate; was introduced as a hypnotic, in doses of 30 grains.

**Phenyl-Urethane (Euphorin).**—A white crystalline powder, only sparingly soluble in Water, soluble in Alcohol (90 p.c.) and in Ether. It should be preserved from the light. A powerful analgesic, but like some other powerful analgesics it tends to interfere with the respiratory processes and to weaken the heart's action. It has proved of special service in the pain of orchitis. Dose.—1 to 5 grains = 0·06 to 0·32 grammes.—*B.M.J.* '98, ii. 1055.

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## UVÆ URSI FOLIA.

### BEARBERRY LEAVES.

The dried Leaves of *Arctostaphylos Uva-ursi*.

Contains a crystallisable glucoside, **Arbutin**, soluble in Water and Alcohol (90 p.c.), dose, 1 to 15 grains.

**Medicinal Properties.**—Astringent and diuretic; it is a disinfectant to the urinary mucous membrane, and is valuable in inflammation of the bladder and urethra.

**Official Preparation.**—Infusum Uvæ Ursi.

**Official in Austr., Belg., Dan., Dutch, Fr. (Busserole), Ger., Ital., Jap., Mex. (Gayaba del pais), Norw., Port. (Uva Ursina), Russ., Span. (Gayuba), Swed., Swiss and U.S.**

### INFUSUM UVÆ URSI. INFUSION OF BEARBERRY.

Bearberry Leaves, bruised, 1; boiling Distilled Water, 20; infuse for fifteen minutes and strain. (1 in 20)

**Dose.**—½ to 1 fl. oz. = 14·2 to 28·4 c.c.

In the 1864 Pharmacopœia the Leaves were not ordered to be bruised; when bruised, the infusion is stronger, but a large deposit forms in the strained fluid.

**Incompatibles.**—Iron salts, Lead salts, Silver Nitrate, vegetable alkaloids, Gelatin.

**Official in Fr. (Tisane), 1 in 100; Ital., 1 in 20 Decoction; U.S. has a Solid and a Fluid Extract.**

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## VALERIANÆ RHIZOMA.

### VALERIAN RHIZOME.

*B.P. Syn.*—VALERIAN Root.

The dried erect Rhizome and Roots of *Valeriana officinalis*, collected in the autumn.

That from wild plants growing on dry soil is preferred. It

owes its properties to a volatile Oil and a volatile Acid; the salts of the latter (Valerianates) are not prepared from the root, but synthetically from Amylic Alcohol.

The bulk of the Valerian root used in this country is of foreign growth, and should either be allowed or expressly prohibited in B.P.

Under the title **Valerianæ Indicæ Rhizoma**, the dried Rhizome and Rootlets of *Valeriana Wallichii* are Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

**Medicinal Properties.**—It is a nervine stimulant and anti-spasmodic. Useful in hysteria, in functional nervous diseases associated with hysteria, and as an adjunct to tonics.

**Official Preparation.**—Tinctura Valerianæ Ammoniata.

**Not Official.**—Tinctura Valerianæ, Tinctura Valerianæ Ætherea, Oleum Valerianæ, Valyl and Acidum Valerianicum.

Official in all the Foreign Pharmacopœias. An **Extract**, and a 1 in 20 Infusion are Official in Ital. An **Extract** in Russ.; a Fluid Extract in Mex. and U.S.

### TINCTURA VALERIANÆ AMMONIATA. AMONIATED TINCTURE OF VALERIAN.

Valerian Rhizome, in No. 40 powder, 4 oz.; Oil of Nutmeg, 30 minims; Oil of Lemon, 20 minims; Solution of Ammonia, 2 fl. oz.; Alcohol (60 p.c.), 18 fl. oz.; by maceration.

Now 1 in 5 instead of 1 in 8; Alcohol (90 p.c.), Oils of Lemon and Nutmeg, and Solution of Ammonia used in place of Aromatic Spirit of Ammonia.

**Dose.**— $\frac{1}{2}$  to 1 fl. drm. = 1·8 to 3·6 c.e.

**Tinctura Valerianæ Indicæ Ammoniata.**—Indian Valerian, in No. 40 powder, 4 oz.; Oil of Nutmeg, 30 minims; Oil of Lemon, 20 minims; Solution of Ammonia, 2 fl. oz.; Alcohol (60 p.c.), 18 fl. oz.; by maceration. Dose.— $\frac{1}{2}$  to 1 fl. drm. = 1·8 to 3·6 c.e. It is Official in the *Ind.* and *Col. Add.* for India and the Eastern Colonies.

### Not Official.

**TINCTURA VALERIANÆ.**—Percolate 1 of Valerian Rhizome, in No. 40 powder, with sufficient Alcohol (60 p.c.), to yield 5.

**Dose.**—1 to 2 fl. drm. = 3·6 to 7·1 c.e.

A similar Tincture (1 in 8) is now included in the *B.P.C.*

Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S., 1 in 5; Mex. and U.S. have also **Fluid Extract**. All by weight, except U.S.

**TINCTURA VALERIANÆ ÆTHEREA.**—Valerian, 1; Spirit of Ether, 5.

Official in Belg., Dan., Dutch Supp., Ger., Hung., Norw., Span. and Swiss, 1 in 5; Fr., Powdered Valerian 1, Ether (sp. gr. 0·758) 5, by percolation; Mex., 1 and 5, Sp. Æther (sp. gr. 0·76)

Russ., Valerian 1, Alcohol (90 p.c.), 4, Ether (0·725), 2. All by weight.

**OLEUM VALERIANÆ.**—A yellow volatile Oil; sp. gr. 0·930 to 0·960. Dose.—2 to 5 minims = 0·12 to 0·3 c.c.

**Official in Austr., Belg., Dutch, Hung. and Port.**

**VALYL** (Diethylamide Valerianate).—An oily liquid, possessing a nauseous odour and taste. Introduced as a sedative. It has been used in nervous and utero-genital affections. Dose.—2 to 10 grains = 0·13 to 0·65 grammes.

Best given in capsules.—*B.M.J.E.* '02, i. 3.

**ACIDUM VALERIANICUM** (Valerianic Acid).—A transparent, colourless, or nearly colourless, oily liquid, possessing a strong characteristic disagreeable odour. It is used in the preparation of the Valeriauates.

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### Not Official.

#### VANILLA.

The Fruit of *Vanilla planifolia*, chiefly used as a flavouring agent. The finest quality comes from Mexico, and large quantities also come from Bourbon. It owes its fragrance to **Vanillin**,  $C_8H_8O_3$ , the Aldehyde of Methylprotocatechuic Acid, which on oxidation yields **Vanillic Acid**,  $C_8H_8O_4$ . In some text-books they are stated to be the same substance, but this is not the case. Vanillic Acid is without odour and does not form a crystallisable compound with Sodium Bisulphite.

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### Not Official.

#### VERATRI VIRIDIS RHIZOMA.

#### GREEN HELLEBORE RHIZOME.

The Rhizome and Rootlets of *Veratrum viride*.

Collected in autumn in U.S. and Canada.

The principal alkaloidal constitueut (about half) is **Cevadine**, the same base as is found in Cevadilla; **Jervine** and **Pseudo-jervine**, in about equal proportions, constituting the remainder.—*P.J.* (3) ix. 986.

**Medicinal Properties.**—Sedative. Has been given in sthenic forms of fever, and to quiet spinal spasms; should be cautiously prescribed.

In puerperal eclampsia.—*L.* '98, i. 146; a mixture containing 10 minims of the tincture with 5 grains of Chloral Hydrate given hourly or 10 minims hypodermically in the treatment of puerperal eclampsia.—*L.* '99, i. 1430.

**Official in Mex., Eleborq Verde; U.S.**

**Veratrum Album** is Official in Ger. and Swed.; **Helleborus Niger** in Dutch Supp.

**TINCTURA VERATRI VIRIDIS** (B.P. '85).—Green Hellebore Rhizome, in No. 40 powder, 1; Rectified Spirit, q.s. to yield 5.

(1 in 5)

**Dose.**—5 to 20 minimis = 0·3 to 1·2 c.c.

Now added to *B.P.C.*

The best menstruum is stated to be Alcohol (70 p.c.).—*C.D.* '92, ii. 651.

**Official in U.S.**, American Hellebore, 4 in 10; also a **Fluid Extract**, 1 in 1.

## VERATRINA.

### VERATRINE.

A white, or greyish-white, odourless, amorphous powder; possessing a very bitter acrid taste and leaving a feeling of numbness on the tongue. It is intensely irritating to the nasal mucous membrane and the smallest particle produces violent sneezing. Permanent in the air. It is Officially described as an alkaloid, or mixture of alkaloids, prepared from Cevadilla, the dried ripe Seeds of *Schœnocalon officinale*.

The nomenclature of the alkaloids contained in this mixture has undergone modification. Wright and Luff assign to the crystallisable portion (called by Merck 'Veratrine') the name of **Cevadine**, as it yields on saponification Cevadic Acid, the name **Veratrine** being reserved for the base described by Couerbe, which yields Veratric Acid. Another base has been called **Cevadiline**, but the bulk of the alkaloid refuses to yield any crystallisable or otherwise definable salts.

**Solubility.**—Scarcely soluble in cold Water; 1 in 1000 of boiling Water; 1 in 3 of Alcohol (90 p.c.); 1 in 6 of Ether; 1 in 3 of Chloroform; sparingly in Glycerin; about 1 in 80 of Olive Oil; and readily in diluted Acids.

**Medicinal Properties.**—A powerful irritant poison, scarcely ever given internally. Externally it acts as an analgesic in neuralgia, more particularly of the fifth nerve. It should not be used where the skin is broken.

*Ph. Ger.* maximum single dose, 0·005 grammie; maximum daily dose, 0·015 grammie.

**Official Preparation.**—Unguentum Veratrinae.

**Not Official.**—Oleatum Veratrinae.

**Antidotes.**—Emetic, stimulants, Coffee, warmth to the extremities. Recumbent position to be strictly maintained.—*Turrell.*

**Official in all the Foreign Pharmacopœias.**

**UNGENTUM VERATRINÆ.** VERATRINE OINTMENT

Dissolve 10 grains of Veratrine in 40 grains of Oleic Acid at a gentle heat, and add 450 grains of Lard. (1 in 50)

Now 1 in 50 instead of 1 in 63, Hard and Soft Paraffins and Olive Oil replaced by Oleic Acid and Lard.

Official in U.S., 1 in 25; Port. and Russ., 1 in 50.

**Not Official.**

**OLEATUM VERATRINÆ** (U.S.).—Veratrine, 2; Oleic Acid, 98 rub together, and heat on a water-bath until dissolved.

Squibb suggests that this should be made 10 p.c. as more likely to give relief in neuralgia.—*Squibb*, p. 164.

**VIBURNUM.****BLACK HAW.**

The Bark of *Viburnum prunifolium*.

It is Official in the *Ind. and Col. Add.* for India and the Eastern and North American Colonies; also **Extractum Viburni Prunifoliae Liquidum** (1 in 1), dose, 60 to 120 minims = 3·6 to 7·1 c.c.

**Medicinal Properties.**—Strongly recommended as a preventative in cases of threatened abortion; to control menorrhagia and metrorrhagia and in all kinds of pelvic inflammation brilliant results in dysmenorrhœa.—*M.A.* '95, 192; *B.M.J.* '95 ii. 1562; *L.* '95, ii. 1625.

Official in Dutch Supp., Mex. and U.S.

The bark of *Viburnum opulus* has also been used in similar cases.

**EXTRACTUM VIBURNI PRUNIFOLII FLUIDUM** (U.S.).—Exhaust by percolation Viburnum (in No. 60 powder), 100 parts, with a mixture of Alcohol 3 and Water 1; reserve the first 85, and evaporate the remainder to a soft extract; dissolve this in the reserved portion, and add enough menstruum to measure 100.

Official in Dutch Supp.

**VINA.****WINES.**

Medicated wines are of very ancient date, and were admitted into our earliest Pharmacopœias. Two only remain as representatives of the old Pharmacopœias—*Vinum Antimoniale* and *Vinum Ferri*; the former was prepared by digesting 4 ounces of the Regulus of Antimony in powder with 3 pounds of ‘White Wine (*Pharmacopœia Londinensis*, 1655). The latter (*Vinum Chalybeatum*) was made with Rhenish Wine and Iron filings.

## VINUM XERICUM.

### SHERRY.

A Spanish Wine.

Unless good sound Sherry is used, the preparations are apt to spoil by keeping.

It contains about 20 p.c. Alcohol by volume.

**Official Preparations.**—Used in the preparation of Vinum Antimoniale, Vinum Colchici, Vinum Ferri, and Vinum Ipecacuanhæ.

### Not Official.

**VINUM XERICUM DETANNATUM (B.P.C.).**—Sherry, 160; Gelatin, cut small, 2; macerate together for fourteen days, and decant.

### Not Official.

## VINCA MAJOR.

### GREATER PERIWINKLE.

An infusion made of dried Herb 2, boiling Water 20, is powerfully astringent, and will often arrest menorrhagia.

**Dose.**—A wineglassful.

**Official in Fr.**, Pervenche Grande.

Dose of the fluid extract, 1 to 2 fl. drm. = 3·6 to 7·1 c.c.

### Not Official.

## YERBA SANTA.

The Leaves of *Eriodictyon Californicum*. They contain 30 to 40 p.c. of a gum-resin.

A stimulating expectorant, recommended in acute bronchitis.

**Fluid Extract**, 1 in 1, made with strong Alcohol; dose, 10 to 60 minims = 0·6 to 3·6 c.c.

### Not Official.

## ZINCUM.

### ZINC.

### Zn, eq. 64·91.

A bluish-white metal, of peculiar taste and of a perceptible smell when rubbed; laminated, and with a crystalline fracture. Sp. gr. 7·1.

It occurs native, as a Sulphide or as a Carbonate, and is separated from impurities by sublimation.

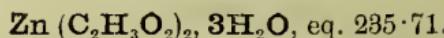
**Official Preparations.**—Used to prepare Liquor Zinci Chloridi, Zinci Chloridum, Zinci Oxidum, Zinci Sulphas.

Official in Mex. and U.S.

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## ZINCI ACETAS.

### ZINC ACETATE.



Soft white glistening monoclinic crystals, possessing an acetous odour and a sharp metallic taste.

The commercial salt as a rule is slightly basic, and does not give a clear solution in Water without the assistance of a little added Acetic Acid.

**Solubility.**—10 in 25 of Water; 4 in 1 of boiling Water; 1 in 40 of Alcohol (90 p.c.); 1 in 3 of boiling Alcohol (90 p.c.).

**Medicinal Properties.**—Similar to the Sulphate, chiefly used as a local astringent.

**Dose.**—1 to 2 grains = 0.06 to 0.13 grammes.

**Not Official.**—Lotio Zinci Acetatis.

Official in Belg., Dutch Supp., Fr., Ger., Hung., Mex., Port., Russ., Span. and U.S.

### Not Official.

**LOTIO ZINCI ACETATIS.**—Zinc Acetate, 2 grains; Water, 1 fl.oz. Mix.

An astringent collyrium in ophthalmia, or as an injection in gonorrhœa after the acute stage has passed.

Tincture of Opium causes no precipitate with this Lotion.

A lotion very commonly prescribed at one time was that containing Zinc Sulphate and Lead Acetate, which mutually react with formation of soluble Zinc Acetate and insoluble Lead Sulphate; it has been superseded by the above.

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### Not Official.

## ZINCI BROMIDUM.

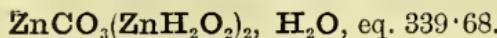
A whitish, very deliquescent, granular powder.

**Solubility.**—4 in 1 of Water; 2 in 1 of Alcohol (90 p.c.).

**Dose.**—2 grains = 0.13 grammes three times a day for epilepsy.

Official in Dutch Supp., Mex., Span. and U.S.

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**ZINCI CARBONAS.****ZINC CARBONATE.**

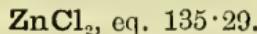
A dry, white, odourless and tasteless amorphous powder, permanent in the air.

The anhydrous normal Carbonate,  $\text{ZnCO}_3$ , occurs native as **Calamine**. The composition of the precipitated hydrated Carbonate varies much according to the conditions under which it is formed.

**Medicinal Properties.**—A mild astringent, used with other substances as a dusting powder, also in lotions.

**Official Preparations.**—Used in the preparation of Zinci Acetas, Zinci Oxidum, and Zinci Valerianas.

Official in U.S., Zinci Carbonas Praecipitatus.

**ZINCI CHLORIDUM.****ZINC CHLORIDE.**

White or almost white, very deliquescent fused irregular masses, or pencil-shaped sticks, or a white granular deliquescent powder. It is strongly caustic, and should be handled with care, and kept in well-stoppered bottles.

**Solubility.**—10 in 4 of Water; 1 in 1 of Alcohol (90 p.c.); freely in Ether; 1 in 4 (nearly) of Glycerin.

**Medicinal Properties.**—Astringent, antiseptic and disinfectant. Seldom given internally. Externally, applied as a caustic, in form of **point** or **paste**, to indolent and malignant ulcers and growths, to condylomata, and to nævi. As a lotion, 20 grains to 1 fl. oz. of Water, it is an efficient substitute for Carbolic Acid, in syringing offensive pus cavities, sinuses, foul ulcers, etc.

As a paste for packing the cavity of uterus in malignant disease.—*B.M.J.* '95, i. 756.

As an injection (1 grain to 1 fl. oz.) in gonorrhœa.

**Official Preparation.**—Liquor Zincii Chloridi.

**Not Official.**—Zinc Chloride Points, Compound Zinc Chloride Points, Guttæ Zincii Chloridi, Guttæ Zincii Chloridi cum Cocaina, Lotio Zincii Chloridi, Pasta Zincii Chloridi, Pasta Zincii Chloridi cum Opio, Pulvis Zincii Chloridi Comp.

**Antidotes.**—See Zinci Sulphas, p. 653.

**Official in Austr., Belg., Dan., Dutch Supp., Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

**LIQUOR ZINCI CHLORIDI.** SOLUTION OF ZINC CHLORIDE.

16 of granulated Zinc dissolved by heating with 44 of Hydrochloric Acid mixed with 20 of Distilled Water, and evaporated to 40. It should be free from Iron and Lead.

When made as above the solution will be basic and precipitate Oxychloride on dilution with Water. It should be evaporated rather lower, then neutralised with Hydrochloric Acid (so that it will cease to precipitate on being diluted with ten volumes of Water, or when this diluted solution just reddens Methyl Orange), and finally made up to 40.

When finished without loss the above quantities will yield a solution sp. gr. about 1·53. For details and an improved formula of **Chlor-Zinc Iodine (Schulze's Solution)** see *P.J.* (3) xxiii. 648.

Official in U.S., sp. gr. 1·535.

**Not Official.**

**ZINC CHLORIDE POINTS.**—Zinc Chloride fused and run into conical moulds; preserved in glass tubes.

Darts of Zinc Chloride have been used in the treatment of Anthrax.—*B.M.J.* '87, ii. 644.

**COMPOUND ZINC CHLORIDE POINTS.**—Zinc Chloride, 1; Zinc Oxide, 1; Wheaten Flour, 2; Water to make a stiff paste, which is formed into points.

**GUTTÆ ZINCI CHLORIDI.**—Zinc Chloride, 2 grains; Distilled Water, 1 fl. oz.—*London Ophthalmic.*

**GUTTÆ ZINCI CHLORIDI CUM COCAINA.**—Zinc Chloride, 2 grains; Cocaine Hydrochloride, 10 grains; Distilled Water, 1 fl. oz.—*London Ophthalmic.*

**LOTIO ZINCI CHLORIDI.**—Zinc Chloride, 1 grain; Distilled Water, 1 fl. oz.—*London Ophthalmic.*

**PASTA ZINCI CHLORIDI.**—Zinc Chloride, 1, 2 or 4; Starch, 6; Lard, 1; Glycerin of Starch, q.s.; rub the Zinc Chloride with the Lard and Starch, and make into a thick paste with Glycerin of Starch.—*University.*

**PASTA ZINCI CHLORIDI COMPOSITA.**—Zinc Chloride paste, 94; Extract of Opium, 4; rub the Extract smooth with 2 of Water, and then mix thoroughly with the paste.—*University.*

**PULVIS ZINCI CHLORIDI COMP.**—Zinc Oxide, mixed with an equal weight of Zinc Chloride, will preserve the latter dry enough to blow through a tube into any cavity required, and may be so kept in a bottle for a long time.

**Not Official.****ZINCI NITRAS.**

Large, colourless, deliquescent, prismatic crystals, very soluble in Water and in Alcohol (90 p.c.).

**Medicinal Properties.**—Used as a caustic in the place of Zinc Chloride; it penetrates deeper and produces less pain. It can be made into a **paste** in the same way as Zinc Chloride.

## ZINCI OXIDUM.

ZINC OXIDE.

ZnO, eq. 80·79.

An odourless and tasteless, white amorphous impalpable powder, which gradually absorbs Carbonic Acid from the air. The method of preparation has some effect upon the colour of the product. A sample prepared from the precipitated carbonate by ignition has a tendency to a faint yellow colour, whilst a sample prepared by the combustion of metallic zinc is pure white.

**Medicinal Properties.**—Internally as a tonic, given in chronic nervous spasmodic affections and to check the perspirations of phthisis. Externally, as a mild astringent application in eczema and slight excoriations and ulcerations, in the form of **ointment** or **paste**; absorbent as a **dusting powder** when mixed with Starch.

**Dose.**—3 to 10 grains = 0·2 to 0·65 grammes.

**Prescribing Note.**—Generally prescribed in the form of pills. A good pill may be made by adding 'Diluted Glucose,' q.s. It is also given in lotions, with and without an equal quantity of Prepared Calamine, q.v. p. 150.

**Official Preparation.**—Unguentum Zinci. Used in the preparation of Zinci Sulphocarbolas.

**Not Official.**—Dusting Powder, Gelatinum Zinci, Lassar's Paste, Pilula Zinci et Belladonnæ, Unguentum Zinci cum Acido Salicylico, Pulvis Zinci et Calomelanos, Zinci Oleas (Shoemaker's), Zinc Oxide Plaster Mulls, Zinc and Salicylic Plaster Mull, and Zinc Gelatin.

**Official in all;** Fr. by the dry as well as the humid process.

### UNGUENTUM ZINCI. ZINC OINTMENT.

Add 3 of finely sifted Zinc Oxide gradually to 17 of Benzoated Lard, previously melted at a low temperature; stir until cold. (1 in 6 $\frac{2}{3}$ )

**Official in Austr.,** 1 in 7 $\frac{1}{2}$ ; Belg., Dan., Dutch Supp., Fr., Ger., Hung., Ital., Jap., Mex., Norw., Russ., Swed. and Swiss, 1 in 10; Span., 1 in 16; U.S., 1 in 5.

### Not Official.

**DUSTING POWDER.**—Zinc Oxide, 3; Salicylic Acid (in fine powder), 1; Starch, 12.

**GELATINUM ZINCI (B.P.C.).**—Dissolve Gelatin 6 in Distilled Water 18; rub down Zinc Oxide 4 with Glycerin 11; add the Gelatin solution, and mix thoroughly.

**GELATINUM ZINCI DURUM (Unna).**—Dissolve Gelatin 15 and Glycerin 25 in Water 45. Rub down Zinc Oxide 10 with Glycerin 15, mix, and add sufficient Water to produce 100. All by weight.

**LASSAR'S PASTE.**—Zinc Oxide, 24; Starch, 24; Salicylic Acid, 2; Soft Paraffin, 50. Used in eczema.

An unusual case of poisoning by absorption from use of Lassar's paste.—*L. '04, i. 432.*

**PILULA ZINCI ET BELLADONNAE.**—Zinc Oxide, 2 grains; Extract of Belladonna (B.P. '85),  $\frac{1}{4}$  grain; Extract of Gentian, q.s.—*Charing Cross.*

**UNGUENTUM ZINCI CUM ACIDO SALICYLICO.**—Salicylic Acid, 20 grains; Zinc Ointment,  $\frac{1}{2}$  oz.; Soft Paraffin,  $\frac{1}{2}$  oz.—*Middlesex.*

**PULVIS ZINCI ET CALOMELANOS.**—Zinc Oxide, Mercurous Chloride, Tannic Acid, and Starch, of each 1.—*Westminster.*

**ZINCI OLEAS** (Shoemaker's).—Dissolve 180 grains of Zinc Acetate in 40 fl. oz. of cold Water; add slowly 20 fl. oz. of a **Solution of Sodium Oleate**, made by dissolving powdered Castile Soap 1 oz. in 20 fl. oz. of Water; wash the precipitate with cold Water, collect and dry.

It forms a solid cake, easily powdered, and melting at about 175° F.

Solution of Sodium Oleate of the above strength is also used to precipitate Bismuth, Copper, and Lead Oleates.

**ZINC OXIDE PLASTER MULLS (Unna).**—Containing  $\frac{1}{2}$  grain and 1 grain to the square inch.

**ZINC AND SALICYLIC PLASTER MULL (Unna).**—Containing Zinc Oxide  $\frac{1}{2}$  grain and Salicylic Acid  $\frac{1}{4}$  grain to the square inch.

**ZINC GELATIN (Unna).**—Zinc Oxide, 10; Gelatin, 10; Glycerin, 20; Water, 20.

### Not Official.

#### **ZINCI PERMANGANAS.**

Reddish-purple, crystalline, hygroscopic masses.

**Solubility.**—About 1 in 3 of Water, generally with a slight residue.

As an **injection** in chronic urethritis, 1 grain in 8 fl. oz. of Water.—*B.M.J. '89, i. 1458.*

### Not Official.

#### **ZINCI PHOSPHIDUM.**

Minutely crystalline, friable fragments, or a greyish-black

powder, containing about 24 p.c. of Phosphorus, corresponding to the formula  $Zn_3P_2$ .

**Solubility.**—Insoluble in Water or Alcohol (90 p.c.). Soluble in Acids with evolution of Phosphuretted Hydrogen, which is not spontaneously inflammable.

**Medicinal Properties.**—Strongly recommended as a substitute for Phosphorus.

In hay fever.—*Pr.* Iv. 205; *P.J.* '95, ii. 205.

**Dose.**— $\frac{1}{20}$  to  $\frac{1}{4}$  grain = 0·0032 to 0·0162 grammes, given in pill with Milk Sugar and Glucose.

**Official** in Fr. (*Phosphure de Zinc*), Mex. and U.S.

## ZINCI SULPHAS.

ZINC SULPHATE.

$ZnSO_4 \cdot 7H_2O$ , eq. 285·41.

Colourless, transparent, somewhat efflorescent, rhombic crystals, or white acicular crystals. It should be kept in well-closed bottles.

**Solubility.**—10 in 7 of Water. Insoluble in Alcohol (90 p.c.).

**Medicinal Properties.**—Astringent; given in chorea, also in infantile diarrhoea; in large doses a prompt emetic. As an astringent injection in leucorrhœa and in the less acute stages of gonorrhœa; as a collyrium in ophthalmia.

**Dose.**—1 to 3 grains = 0·06 to 0·2 gramme as a tonic; as an emetic, 10 to 30 grains = 0·65 to 2 grammes.

*Ph. Ger.* maximum single dose, 1·0 gramme.

**Prescribing Notes.**—*Tincture or Wine of Opium causes no precipitate with Solutions of Zinc.*

**Incompatibles** of Zinc salts are—Alkalies and their Carbonates, Lime Water, astringent vegetable Infusions or Decoctions, and Milk.

**Antidotes.**—In case of poisoning with the salts of Zinc, Sodium Carbonate or Potassium Carbonate in large quantities dissolved in warm Water, Milk and Eggs freely, Tannic Acid or strong Tea, Laudanum, Linseed Meal Poultices to abdomen. If there is much pain in the abdomen, an enema of gruel, or starch and water may be given.—*Murrell.*

**Official Preparations.**—Used in the preparation of Unguentum Zinc Oleatis, Zinc Carbonas, and Zinc Valerianas.

**Not Official.**—*Injectio Sulphatum*, *Injectio Zinc Sulphatis*, *Lotio Rubra*, and *Lotio Zinc Sulphatis*.

**Official in Austr., Belg., Dan., Dutch, Fr., Ger., Hung., Ital., Jap., Mex., Norw., Port., Russ., Span., Swed., Swiss and U.S.**

**UNGUENTUM ZINCI OLEATIS.** ZINC OLEATE OINTMENT.

Precipitate a solution containing 2 of Zinc Sulphate in 4 of Distilled Water with a solution of Hard Soap 4 in Distilled Water 40; wash the precipitated Oleate with hot Distilled Water until free from Sulphate; dry and mix with an equal weight of the Soft Paraffin, melted; stir until cold.

The Zinc Oleate is now made by precipitation instead of dissolving Zinc Oxide in Oleic Acid.

**Not Official.**

**INJECTIO SULPHATUM.**—Zinc Sulphate, Copper Sulphate, Ferrous Sulphate and Alum, of each 1 grain, Water to 1 fl. oz.—*Lock Hospital.*

**INJECTIO ZINCI SULPHATIS.**—Zinc Sulphate, 3 grains; Water, 1 fl. oz.

For gonorrhœa and leucorrhœa.

**LOTIO RUBRA.**—Zinc Sulphate, 2 grains; Compound Tincture of Lavender, 10 minimis; Water to 1 fl. oz. A stimulant to indolent ulcers.

**LOTIO ZINCI SULPHATIS.**—Zinc Sulphate, 1 grain; Distilled Water, 1 fl. oz. Used in ophthalmia.—*London Ophthalmic.*

Antiseptin is stated to be a mixture of Zinc Sulphate and Iodide, Thymol and Boric Acid.

**Zinci Sulphis** (Zinc Sulphite) is a white crystalline powder, sparingly soluble in Water. It has been used as a relatively non-toxic antiseptic for impregnating gauze and dressings.

**CADMII SULPHAS.**—Colourless crystals, readily soluble in Water, insoluble in Alcohol. Has been used as an astringent in the place of Zinc Sulphate.

**Official in Belg., Fr., Mex. and Port.**

**ZINCI SULPHOCARBOLAS.**

**ZINC SULPHOCARBOLATE.**

**ZINC PHENOL-PARA-SULPHONATE.**

**Zn(OH·C<sub>6</sub>H<sub>4</sub>·SO<sub>3</sub>)<sub>2</sub>, 8H<sub>2</sub>O,** eq. 551·55.

Colourless or almost colourless efflorescent rhombic crystals, sometimes possessing a faint Phenol odour and slightly pinkish tint.

It should be kept in well-closed bottles.

It is extraordinary that the Official monograph should describe the salt as 'efflorescent' when the Official formula shows only one molecule of water of crystallisation; as a matter of fact, the commercial salt contains 8 molecules of water of crystallisation, and corresponds to the above formula.

Prepared in the Official way it will contain a quantity of Sulphate.

**Solubility.**—1 in 2 of Water; 3 in 1 of boiling Water; 1 in 2½ of Alcohol (90 p.c.).

**Medicinal Properties.**—Astringent and antiseptic.

For a spray to the throat, 5 grains to the ounce of Water; for a nasal douche, 2 grains to the ounce of Water; for vaginal injection, 60 grains in a pint of Water, for leucorrhœa or gonorrhœa.

**Official in Dutch, Sulphophenylas Zincicus; Russ. and Swiss, Zincum Sulfophenolicum.**

## ZINCI VALERIANAS.

ZINC VALERIANATE.

ZINC-ISO-VALERIANATE.

$\text{Zn}(\text{C}_5\text{H}_9\text{O}_2)_2$ , eq. 265·53.

White lustrous pearly scales, having a strong odour of Valerianic Acid and a sweetish astringent metallic taste.

It should be kept in well-stoppered bottles.

The commercial 'præcip.' generally contains a quantity of Oxide, but pure samples can occasionally be obtained.

**Solubility.**—1 in 120 of Water; 1 in 60 of Alcohol (90 p.c.); 1 in 500 of Ether.

**Medicinal Properties.**—Antispasmodic and nervine tonic, used in various neuralgic and hysterical affections, and sometimes in chorea.

In hay fever.—*B.M.J.* '96, i. 967.

**Dose.**—1 to 3 grains = 0·06 to 0·2 grammie.

**Incompatibles.**—All acids, soluble Carbonates, most metallic salts and vegetable astringents.

**Official in Belg., Dutch, Fr., Hung., Ital., Mex., Port., Russ., Span., Swed., Swiss and U.S.**

## Not Official.

**PILULA VALERIANÆ COMPOSITA.**—Zinc Valerianate, Iron Valerianate and Quinine Valerianate, of each 1 grain.—*Samaritan.*

**PILULA ZINCI VALERIANATIS.**—Zinc Valerianate, 1 grain; Compound Pill of Asafetida, 2 grains.—*Throat.*

## ZINGIBER.

GINGER.

The scraped and dried Rhizome of *Zingiber officinale*.

From plants cultivated in the West Indies, India, and other countries.

**Medicinal Properties.**—Aromatic stimulant and carminative. It is given in atonic dyspepsia, flatulence, and as a corrective adjunct to purgative medicines.

**Official Preparations.**—Syrupus Zingiberis, and Tinctura Zingiberis; used in the preparation of Infusum Sennæ, Pilula Scillæ Composita, Pulvis Cinnamomi Compositus, Pulvis Jalapæ Compositus, Pulvis Opii Compositus, Pulvis Rhci Compositus, Pulvis Scammonii Compositus. Contained in Mistura Sennæ Composita, Pilula Aloes et Ferri, and Pilula Cambogiæ Composita. The **Tincture** is used in the preparation of Acidum Sulphuricum Aromaticum, Liquor Sennæ Concentratus, Pilula Scammonii Composita, and contained in Infusum Cinchonæ Acidum.

**Not Official.**—Tinctura Zingiberis Fortior, and Oleoresina Zingiberis.

**Official in all;** Fr., Gingembre; Ital., Zenzero; Port., Gengibre; Mex. and Span., Jengibre.

#### SYRUPUS ZINGIBERIS. SYRUP OF GINGER.

1 of Ginger (in the form of strong Tincture 1 in 2); Syrup q.s. to yield 40. (1 of Ginger in 40)

**Dose.**— $\frac{1}{2}$  to 1 fl. drm. = 1·8 to 3·6 c.c.

**Official in** Dutch Supp., 1 in 50; Jap., 1 of Tincture in 10; Swed., 1 (rhizome) in 20, by weight; U.S., 3 (Fluid Extract) in 100.

#### TINCTURA ZINGIBERIS. TINCTURE OF GINGER.

1 of Ginger in No. 40 powder, percolated with Alcohol (90 p.c.) to yield 10.

Now 1 in 10 instead of 1 in 8.

**Dose.**— $\frac{1}{2}$  to 1 fl. drm. = 1·8 to 3·6 c.c.

**Official in** Belg., Fr., Ger., Hung., Ital., Jap., Mex., Port., Russ., Swiss and U.S., 1 in 5; all by weight except U.S.

#### Not Official.

**TINCTURA ZINGIBERIS FORTIOR.** *Syn.*—ESSENCE OF GINGER (*B.P.* '85).—Ginger percolated with Alcohol (90 p.c.) to form 1 in 2.

This Tincture is now included in *B.P.C.*, dose 5 to 20 minimis = 0·3 to 1·2 c.c.

Squire's **Essence of Ginger** has always been twice the above strength.

By repercolation a Fluid Extract 1 in 1, or even 2 in 1, can be readily prepared.

**OLEORESINA ZINGIBERIS (U.S.).** *Syn.*—GINGERINE.

Ginger, in No. 60 powder, exhausted by percolation with Ether and evaporation.

Should be kept in a well-stoppered bottle.

**Not Official.**

## THERAPEUTIC AGENTS OF MICROBIAL ORIGIN

By R. TANNER HEWLETT, M.D., M.R.C.P., D.P.H., Prof. of General Pathology and Bacteriology, King's College, London and Physician to the Dreadnought Scamen's Hospital.

### THERAPEUTIC SERA.

*Syn.*—ANTITOXINS, OR ANTI-SERA.

These are obtained by treating an animal with subcutaneous or intravenous injections of increasing doses of (*a*) bacterial toxins, (*b*) bacterial cultures, living or killed, (*c*) a combination of *a* and *b*, then bleeding the animal, allowing the blood to coagulate, drawing off the serum and bottling this in the fluid state or after drying *in vacuo*; all these operations being carried out under the strictest aseptic precautions. To the fluid serum a small quantity of an antiseptic is usually added, and each bottle or vial generally contains a single dose only. The dried serum should be in the form of thin scales or fine powder, otherwise it is difficult to dissolve; for use each gramme (corresponding to about 10 c.c. of fluid serum) of the solid is dissolved in 5 to 10 c.c. of cool distilled Water (not above 40° C.), previously sterilised by boiling.

Two classes of anti-sera may be distinguished: one prepared by method *a*, with bacterial toxins, to which the term 'antitoxin' is alone strictly applicable (*e.g.* diphtheria and tetanus antitoxins), the other prepared by method *b*, and termed anti-microbial, or simply anti-sera (*e.g.* anti-streptococcic, anti-plague, and anti-pneumonic sera).

The last named are much less potent than the antitoxins, and attempts have been made to reinforce their action by the simultaneous injection of fresh normal serum, but without much success.

It is customary in some instances to employ several strains of the organism in the preparation of the serum; such sera are termed 'polyvalent.' The subject of serum treatment is fully dealt with in Hewlett's 'Serum Therapy.'

The therapeutic sera in most instances retain their activity for several weeks at least if kept in a cool, dark place—preferably an ice-safe: diphtheria and tetanus antitoxins probably for nearly a year, the anti-microbial sera for a much shorter period. They should not be administered with any other substance, must not be heated, and a bottle of the fluid having once been opened, any fluid not used at the time should be discarded. The dried products are preferable in hot climates.

The dose of therapeutic sera corresponds usually to 5 to 20 c.c. of the fluid serum, according to the activity, which is estimated

by ascertaining the amount of serum required to neutralise a given amount of toxin or culture. The dose depends on the gravity of the disease and not on the age of the patient. Symptomatic treatment on general principles should be employed in addition to the anti-serum.

The therapeutic sera are administered by subcutaneous injection, in the abdomen or between the scapulae, the skin having been previously disinfected with an antiseptic lotion and the syringe by boiling for five minutes. Or by intravenous injection into a superficial vein, the serum being warmed by standing the bottle in warm Water ( $35^{\circ}$  to  $40^{\circ}$  C.) and strained through a piece of fine muslin, sterilised by boiling, if there be any deposit. Care must be taken that no air is injected. Early treatment is of the utmost importance.

The therapeutic sera are specific, e.g. diphtheria antitoxin is of use only in diphtheria; carefully administered they are harmless, but cutaneous eruptions or joint pains may follow, for the treatment of which Calcium Chloride is of service.

The Anti-sera may be used as prophylactics (dose 10 to 20 c.c. subcutaneously), but the immunity produced does not last longer than three weeks.

**DIPHTHERIA ANTITOXIN.**—Anti-diphtheritic Serum is Official in the *Ph. Ger.* Both a liquid and a solid antitoxin are described, the former as a yellowish, transparent fluid, having the odour of the preservative agent, and with at most a slight sediment, the latter is a yellowish-white powder, or yellow transparent lamellæ, which, by the addition of 10 parts of Water, dissolves to a liquid corresponding in colour and general appearance to the liquid diphtheria antitoxin.

The sizes of the liquid diphtheria antitoxin mostly used are No. 0, 200 immunisation units; No. 1, 500 to 600 immunisation units; No. 2, 1000 immunisation units; No. 3, 1500 immunisation units.

The solid diphtheria antitoxin is required to contain at least 5000 immunisation units per gramme.

The *Ph. Ger.* also stipulates that antitoxin, with marked permanent turbidity or thick deposit, as well as serum of a prohibited test-number, is not permitted to be sold in the pharmacy.

It should be protected from the light, and stored in a cool place.

The therapeutic value is reckoned in Ehrlich units, 1 unit being that amount of serum which will completely neutralise about 100 lethal doses of toxin in a medium-sized guinea-pig.

The method of standardisation is a very exact one, devised by Ehrlich, but is too complicated to explain here. The different makes are of different strengths, i.e. contain a variable number of units in a given volume. The dosage is always referred to in units.

The dosage varies with the severity of the attack, and with the lapse of time after the onset before treatment is commenced. In a mild case, coming under observation on the first day, a single

dose of 4000 units may suffice, but is best repeated on the next day. In severe cases the 4000 units should be repeated every four hours for three or four doses, and repeated the next day if necessary. In bad cases, coming under observation late, 8000 or more units should be given, and repeated every three or four hours. In such cases Cairus considers that valuable time is saved by giving the primary dose intravenously. If there be a reasonable suspicion that the case is diphtheritic no time should be lost in giving antitoxin. The guide to the administration of subsequent doses is the general condition and the appearance of the membrane; this when the patient is fully under the influence of antitoxin appears to melt away.

The prophylactic dose should be not less than 500 units.

Several preparations by different makers can be obtained.

**TETANUS ANTITOXIN.**—If the case be seen immediately upon the development of the premonitory symptoms (stiffness, etc. of the facial muscles) 25 to 30 c.c. of the serum may be injected subcutaneously, followed by an injection of 10 c.c. every eight hours as long as the symptoms last. If any time has elapsed since the development of the premonitory symptoms 10 c.c. should be administered intravenously and 20 c.c. subcutaneously, followed by 10 c.c. subcutaneously every eight hours as before. But if the case has lasted any length of time, and especially if spasms have already occurred, no time should be lost in giving the antitoxin by cerebral or spinous inoculation (*see infra*).

Dried and pulverised tetanus antitoxin has been recommended as a dressing for wounds soiled with earth, etc.

For prophylactic use three doses of 10 c.c. should be injected at intervals of a fortnight.

In veterinary practice, 20 to 40 c.c. may be injected every twelve to twenty-four hours, but unless the animal be a valuable one the cost of the treatment is prohibitive.

Since Tetanus Toxin becomes fixed in the cells of the central nervous system, and antitoxin is but slowly absorbed from the subcutaneous tissues, it is desirable, in order to obtain a maximum and rapid response, to inject the antitoxin so that it may at once come in contact with the nerve tissues. This may be done by (a) intra-cerebral, into the cerebral hemispheres, (b) intra-ventricular, into the lateral ventricles, (c) intra-spinous, by lumbar puncture, inoculation. A primary dose of 5 c.c. of tetanus antitoxin of double strength (*i.e.* 1 grammme of the solid dissolved in 5 c.c. of Water) may thus be administered, subsequent doses being given subcutaneously.

A method given by Roux and Borrel.—*T.G.* '98, 773.

A method given by Semple.—*B.M.J.* '99, i. 10.

**ANTI-VENENE.**—An antitoxin prepared by the injection of snake venom. A separate serum is required for every venom so that this antitoxin must have a limited use. That prepared by Calmette, of Lille, is mainly antidotal for the venom of the cobra. At least 30 to 40 c.c. should be injected at the earliest possible

moment; if any interval has elapsed since the bite, 10 c.c. should be given intravenously in addition.

**ANTI-STREPTOCOCCIC SERUM.**—The dose is 10 to 20 c.c. every twelve or twenty-four hours. Some Continental authorities regard this amount as much too small, and administer 50 to 150 c.c. for a dose.

N.B.—*Streptococcus* Antitoxin rapidly diminishes in strength with age, and should not be kept.

Is of especial value in erysipelas. Some cases of septicæmia react marvellously to it, in others apparently similar it has little effect. Cases of septicæmia may be due to a variety of organisms, but it is only in pure streptococcic infections that the serum can be expected to have any effect. Even in streptococcic infections it is not always efficacious; there seem to be many varieties of streptococci, and a serum prepared with one variety may have little or no antidotal action towards another variety. The serum should be a 'polyvalent' one, *i.e.* prepared with several varieties or strains.

**ANTI-PNEUMOCOCCIC SERUM.**—The dose is 20 to 30 c.c. subcutaneously twice daily until the crisis. If the case be seen early, this serum may be very useful in the case of debilitated, aged, or alcoholic patients. Pane's serum seems to be the most potent.

Washbourn, *B.M.J.* '97, i. 510; ii. 1849; and Eyre, *ib.* '99, ii. 1247; Wilson, *Journ. Amer. Med. Assoc.* 1900 (Sep.), 595; Tyler, *ib.* 1901 (June), 1540.

**ANTI-PLAGUE SERUM.**—Yersin's serum is that generally employed. Calmette recommends 20 c.c. intravenously to be given immediately, followed by two subcutaneous doses of at least 40 c.c. each during the first twenty-four hours, and subsequently 10 to 40 c.c. daily, according to the condition of the patient. Choksy and also Cairns recommend still larger doses (60, 80, 100, 200 c.c.). The prophylactic dose is 10 c.c. subcutaneously.

Calmette, *Ann. de l'Inst. Pasteur*, xiii. '99, 865; Cairns, *L.* '03, i. 1287.

**ANTI-TYPHOID SERUM.**—No satisfactory serum seems to have been prepared as yet. The sera on the market are anti-microbial; dose 10 to 20 c.c. Chantemesse has prepared a serum, the use of which he claims gives good results, but little has been heard of it lately.

Chantemesse, *La Presse Méd.* '02, No. 108, 122; Macfadyen, *B.M.J.* '03, i. 681.

**ANTI-TYPHOID EXTRACT OF JEZ.**—Prepared from the tissues of immunised rabbits. Dose, 2 drm., *by the mouth* every one to two hours until temperature becomes remittant.

*See B.M.J.E.* '01, i. 51; '02, i. 27.

**ANTI-TUBERCLE SERUM.**—Paquin and Maragliano have each prepared an anti-tubercle serum.

Dr. Marmorek has obtained a new tuberculous serum by growing the young bacilli in a medium consisting of leucotoxic calf serum and Glycerin liver bouillon. In pulmonary tuberculosis he claims, by the use of this antitoxin, to have produced amelioration, and even definite cures. In pleurisy there was a rapid diminution of the effusion.—*B.M.J.* '03, ii. 1434; *L.* '03, ii. 1470, 1642, 1746.

Not very favourably reported on.—*B.M.J.* '03, ii. 1621; *L.* '03, ii. 1695.

The dose for rather chronic cases is ordinarily 5 c.c., whilst in acute cases, such as meningitis, as much as from 20 to 30 c.c. in divided doses may be given every day for four or five days, the dose being then gradually diminished. The serum when given in carefully graduated doses, with proper precautions and in suitable cases, does no harm. Experience tends to show that the serum does produce a specific antitoxic effect.—*L.* '04, i. 859, 979; *B.M.J.* '04, i. 749, 857.

**SERUM FOR HAY FEVER.**—Dunbar, by injecting horses with the toxin extracted from the pollen of various *graminaceæ*, has obtained an anti-serum which is stated entirely to allay the troublesome symptoms of hay-fever. The fluid serum is applied frequently to the eyes, a solid powder to the nose. The remedy is sold under the name of 'Pollantin.'

Semon, *B.M.J.* '03, i. 713; '04, i. 1168.

**CANCER SERUM.**—Various sera have been prepared for malignant growths. The most recent is that of Schmidt, but reports of its use are not encouraging.—*L.* '03, ii. 1374; *B.M.J.* '04, i. 299.

**NORMAL SERUM FOR ALIMENTATION.**—Normal horse serum, heated to 60° C. for half-an-hour, may be used (*a*) to replace for a short time, or (*b*) to supplement, gastric or rectal feeding in cases of vomiting, obstruction, etc. For (*a*) children 30 to 50 c.c., adults 100 to 150 c.c., for (*b*) 20 to 40 c.c. should be given subcutaneously daily.

Many other anti-sera have been prepared, but are of doubtful value and are not on the market (*e.g.* anthrax, cholera, dysentery, hydrophobia, leprosy, scarlatina, syphilis, whooping-cough, etc.).

### COLEY'S FLUID.

A fluid prepared by cultivating the streptococcus of erysipelas and the *bacillus prodigiosus* in broth, and heating to 58° C. for one hour.

It has been used in the treatment of malignant growths, especially sarcomata. The dose to commence with is  $\frac{1}{2}$  to 1 minim, administered by injection in the neighbourhood of the tumour. The dose is gradually increased, the guide being the amount of reaction produced,

## TUBERCULIN PREPARATIONS.

**A.—KOCH'S ORIGINAL TUBERCULIN.**—Prepared by boiling, concentrating, and filtering three-months-old glycerin broth cultures of the tubercle bacillus.

An amber-coloured, syrupy fluid, with a characteristic odour. Gives the reactions for glycerin and for albumoses.

The maximum initial dose should not exceed 0·001 c.c., and is administered by subcutaneous injection. The injection is followed in tubercular subjects by a rise of temperature of 2° to 5° F., and constitutional disturbance more or less severe. The dose must not be repeated until the reaction produced by the preceding one has completely passed off. The same dose is administered until it is followed by only a slight reaction ; a larger amount may then be given, increasing by 0·001 c.c. until 0·005 is reached, then by 0·002 c.c. and so on.—Watson Cheyne, *Med. Chirurg. Trans.*, 1891.

Goetsch considers that it is undesirable to obtain a reaction, and therefore commences with very small doses, 0·0001 to 0·00001 gramme ; if even the last produces reaction, treatment is commenced with the *new* tuberculin 0·001 increasing to 0·1 milligramme. When this is reached treatment is continued with the old tuberculin, commencing with 0·0001 to 0·001 gramme.

For diagnostic purposes the initial dose should not exceed 0·005 c.c., which, if no reaction is produced, may be followed by 0·01 c.c. and 0·02 c.c.

(For the diagnosis of tuberculosis in cattle the dose is 0·1 c.c. to 0·2 c.c.)

For the commencement of treatment a 1 p.c. solution is a convenient dilution, later on a 10 p.c. solution. The dilutions should be made with a  $\frac{1}{2}$  p.c. aqueous solution of carbolic acid, and only so much prepared as can be used in a few days.

**B.—KOCH'S NEW TUBERCULIN.**—There are three varieties, termed respectively A., O., and R. Tuberculin R. is the only one of therapeutic value. It is prepared by triturating and emulsifying virulent tubercle bacilli with distilled water and centrifugalising. The fluid contains 10 milligrammes of solid matter per cubic centimetre.

**TUBERCULINUM KOCHI.**—Tuberculin R. is now included in the *Ph. Ger.* It is described as a clear, light brown fluid, possessing a pleasant aromatic odour. It is readily miscible with Water. It contains in addition to the active constituents about 40 parts of Glycerin in 100 parts, as well as the constituents of the bouillon, but no antiseptic.

It is put up in flasks bearing an Official leaden seal, and only the undiluted preparation is allowed to be held in stock. The dilutions recommended by the physician are directed in all cases to be freshly prepared, and Sterilised Distilled Water or, still better, a 0·5 p.c. Carbolic Solution to be used in the preparation

thereof. It must be kept in a cool place and protected from the light.

The fluid is administered by subcutaneous injection after diluting with sterile 20 p.c. glycerin solution. The preliminary doses should correspond to not more than  $\frac{1}{500}$  of a milligramme of solid matter, i.e. 0·2 c.c. of a dilution of 1:1000. The injections are repeated every other day, and the dose is slowly increased until it contains 20 milligrammes of solid matter, i.e. 2 c.c. of the undiluted fluid.

REFERENCES.—*L.* '97, ii. 568, 600, 704, 1488; '98, ii. 194; *B.M.J.* '97, ii. 207; '98, i. 357; '98, ii. 77; *B.M.J.E.* '97, ii. 19, 27, 31, 55, 103; '98, i. 47, 55; *T.G.* '97, 850; '98, 400; *Pr.* lix. 399. Oxy Tuberculin.—*L.* '98, i. 179; *B.M.J.E.* '98, ii. 27.

## VACCINES.

**GLYCERINATED VACCINE LYMPH** is prepared by mixing calf lymph with 50 p.c. of glycerin and storing for three months; this destroys all extraneous organisms.

**ANTI-STAPHYLOCOCCIC VACCINE** is prepared from cultures of the *S. pyogenes aureus*. Has been employed by Wright in chronic staphylococccic infections, e.g. acne, furunculosis, sycosis, etc.—*B.M.J.* '04, i. 1075.

**ANTI-CHOLERA VACCINE** is prepared from virulent cultures of the cholera spirillum. Dose, 1 c.c. (Wright and Bruce, *B.M.J.* '93, i. 227).

**ANTI-TYPHOID VACCINE** is prepared from virulent cultures of the *bacillus typhosus* (Wright and Semple, *B.M.J.* '97, i. 256; Wright and Leishman, *ib.* '00, i. 122).

**ANTI-PLAGUE VACCINE** is prepared from cultures of the *bacillus pestis* (*B.M.J.* '97, i. 1057 and 1461).

**ANTI-RABIC INOCULATION.**—The Pasteur system of inoculation as practised for bites of rabid animals. Emulsions of spinal cord of rabbits dried for periods varying from 14 to 3 days and injected subcutaneously. The treatment must be carried out at an Institute (e.g. Pasteur Institute, Rue Dutot, Paris; Pasteur Institute, Lille).

Some of the anti-sera (Diphtheria, Tetanus, Plague, and Streptococcus) may be employed as prophylactics, but their protective power is transient (three weeks), whereas the vaccines protect for at least many months.

## MALLEIN.

Prepared by boiling and concentrating broth cultures of the glanders bacillus. Employed for the diagnosis of glanders in animals. The requisite dose is injected subcutaneously in the neck. In a glandered animal a large swelling forms at the seat

of inoculation, any local lesion becomes enlarged, and the temperature rises at least  $2\cdot5^{\circ}$  F. above the normal. It is of no therapeutic value.

### DE BACKER'S FLUID.

Pure cultures of yeasts stored under pressure in syphon-like vessels provided with hollow needles by means of which the dose is injected.

Has been used in the treatment of tuberculosis and cancer (*B.M.J.* '97, ii. 802).

## SPAS IN BRITAIN.

**BATH** (Somersetshire).—The only true thermal Water in England. Saline, 21 grains in 20 oz. Chiefly Calcium Sulphate and small quantities of Sodium Sulphate and Magnesium Chloride, with Carbonic Acid Gas and Nitrogen. Several baths varying in temperature from  $88^{\circ}$  to  $120^{\circ}$  F. ( $31\cdot1^{\circ}$  to  $48\cdot8^{\circ}$  C.). For chronic rheumatism, gout, and paralysis. The Water is aerated and sold in bottles under the name of **Sulis Water**. Radium has been discovered in the Waters of Bath and Buxton.

**BUXTON** (Derbyshire).—A Water containing only  $2\frac{1}{4}$  grains of salts in 20 oz., with Carbonic Acid gas and Nitrogen. Temp.  $82^{\circ}$  F. ( $27\cdot7^{\circ}$  C.). For chronic gout and rheumatism.

**FLITWICK** (Amphill, Beds.).—Chalybeate, aperient; 31 grains in 20 oz. Iron Carbonate, Magnesium and Sodium Sulphates, Magnesium Chloride and Calcium Carbonate.

**HARROGATE** (Yorkshire).—Several springs, sulphur, and chalybeate. The old sulphur spring contains 137 grains in 20 oz., chiefly Chlorides, with Sulphuretted and Carburetted Hydrogen. Of the chalybeate Waters, the new spring contains 62 grains in 20 oz., chiefly Chlorides, with about  $1\frac{1}{2}$  grains Iron Chloride, together with Carbonic Acid gas and Nitrogen.

**LEAMINGTON** (Warwickshire).—‘Old well,’ saline, about 104 grains in 20 oz., chiefly Sodium and Calcium Chlorides, with Sodium Sulphate and Carbonic Acid. The saline chalybeate Waters contain about 132 grains in 20 oz., chiefly Calcium, Magnesium and Sodium Chlorides, with Sodium Sulphate and a small quantity of Iron Carbonate. In stomach and liver complaints, in gouty and rheumatic affections.

**LLANGAMMARCH** (Wales).—Barium Water. About 38 grains in 20 oz., chiefly Sodium, Calcium and Magnesium Chlorides,

with about  $\frac{3}{4}$  grain of Barium Chloride. Cardiac tonic. In glandular affections, gout and rheumatism.

**MALVERN** (Worcestershire).—A table Water nearly pure, containing about  $\frac{3}{4}$  grain of mineral salts in 20 oz. Useful in kidney and bladder affections.

**STRATHPEFFER** (Ross-shire).—Two springs, Upper and Lower. Sulphurous. Containing chiefly Sodium and Calcium Sulphates, with Sulphuretted Hydrogen. The Upper about 18 grains in 20 oz.; the Lower about  $13\frac{1}{2}$  grains and slightly less Sulphuretted Hydrogen than the Upper.

**WOODHALL** (Lincolnshire).—About 190 grains in 20 oz., chiefly Sodium, Calcium and Magnesium Chlorides, with Sodium and Potassium Bromides and Potassium Iodide. A ‘mutterlauge’ is also used. Useful in chronic rheumatism, scrofula, syphilis, etc.

## SPAS.—FOREIGN.

**ACHSELMANNSTEIN** (Bavaria).—Saline, aperient, chalybeate. About 2237 grains in 20 oz., chiefly Sodium and Magnesium Chlorides, with Sodium and Calcium Sulphates and Carbonic Acid gas. Baths and Vapour Baths for incipient tuberculosis, cutaneous diseases and uterine disorders. May to September.

**ADELHEIDSQUELLE** (Heilbrunn, Bavaria).—Saline, about 58 grains in 20 oz., chiefly Sodium Chloride (44 grains), with Sodium Iodide  $\frac{1}{2}$  grain and Bromide about  $\frac{1}{2}$  grain and Carbonic Acid gas. Acts on the glandular, lymphatic, and cutaneous systems. May to September. Imported.

**AESCLAP** (Buda-Pesth, Hungary).—Aperient, antacid. About 334 grains in 20 oz. Chiefly Sodium Sulphate (125 grains) and Magnesium Sulphate (154 grains), with Sodium Chloride and Calcium Sulphate. For habitual constipation and disorders of the liver. Imported.

**AIX-LA-CHAPELLE** (Rhine Province, Germany).—Several springs. Thermal  $113^{\circ}$  to  $133^{\circ}$  F. ( $45^{\circ}$  to  $56.1^{\circ}$  C.). Saline, sulphurous. About 39 grains in 20 oz., chiefly Sodium Chloride (25 grains) and Sodium Carbonate (about 5 grains), with varying quantities of Sodium Sulphide. Used in cutaneous diseases, rheumatism and syphilis. Summer season April to October. Winter season November to April. Imported.

**AIX-LES-BAINS** (Savoy, France).—Sulphurous. Two chief springs are ‘Sulphur Spring’ and ‘Alum Spring.’ Thermal  $109.5^{\circ}$  to  $112^{\circ}$  F. ( $42.7^{\circ}$  to  $44.4^{\circ}$  C.). About  $3\frac{3}{4}$  grains in 20 oz., chiefly Sodium and Magnesium Sulphates, with

**Sulphuretted Hydrogen in the 'Sulphur' Spring.** Rheumatism, gout, eczema. It contains the organic substance 'Glaireine' or Barègine peculiar to sulphur Waters. April to November.

**ALET** (Aude, France).—Alkaline. Thermal. 82° F. (27.7° C.) for baths, and a ferruginous Water 50° F. (10° C.). Weak in minerals, about 4½ grains in 20 oz. Tonic in debility and dyspepsia.

**ALEXANDERBAD** (Bavaria).—Chalybeate. About 3 grains in 20 oz. of which about ½ grain is Iron Carbonate, with Carbonic Acid gas. May to October.

**ALEXISBAD** (Germany).—Chalybeate, 'Alexis-Brunnen' and 'Freundschafts-Brunnen' are used for drinking and the 'Selke-Brunnen' for bathing. June to September.

**ALLEVARD** (Isère, France).—Gaseous, iodo-sulphuretted. About 195 grains in 20 oz. Chiefly Calcium and Magnesium Carbonates, Chlorides and Sulphates, with about 0.05 grain of Iodine, Carbonic Acid gas and Sulphuretted Hydrogen. June to September.

**APENTA** (Hungary).—Aperient. Chiefly Sodium Sulphate (about 161 grains) and Magnesium Sulphate (about 182 grains), with Sodium Chloride and Calcium Sulphate in 20 oz. Imported.

**APOLLINARIS** (Neuenahr, Rhine Province, Germany).—Alkaline, gaseous. About 22 grains in 20 oz., chiefly Sodium Carbonate (about 11 grains), Chloride and Sulphate, with Magnesium Carbonate. Free Carbonic Acid Gas. Imported and drunk as a table Water.

**ARABELLA** (Hungarian).—Aperient. Contains chiefly Magnesium and Sodium Sulphates, with Calcium Sulphate and Magnesium Chloride. For liver and kidney complaints, gastric catarrh, diabetes.

**ARNSTADT** (Germany).—Brine spring, for baths. About 2280 grains in 20 oz., of which 2150 grains are Sodium Chloride. Used for scrofula. 'Riedquelle' with about 34 grains Sodium Chloride in 20 oz., for drinking. April to September.

**AUTEUIL** (France).—Chalybeate. About 28 grains in 20 oz., about 6 grains being Iron and Aluminium Sulphates.

**BADEN** (Vienna).—Saline and sulphurous. About 17 grains in 20 oz., chiefly Calcium, Potassium and Sodium Sulphates, with Magnesium Sulphide and Chloride. Principally used for bathing, also mineralised mud cataplasms in rheumatism. May to October.

**BADEN-BADEN** (Germany).—Several thermal springs, 124° to 150° F. (51.1° to 65.5° C.). 'Hauptquelle' most used for drinking. Saline, about 27 grains in 20 oz. The Lithia Waters contain about 3 grains Lithium Chloride in 20 oz.

Other salts chiefly Chlorides and Carbonates of Sodium, Calcium and Magnesium, with trace of Iron Arsenate. For rheumatoid arthritis, chronic gouty affections and paralysis. May to October.

**BAGNÈRES-DE-LUCHON** (France).—Thermal sulphur springs 61° to 152° F. (16·1° to 66·6° C.). About 2 grains Iron, Manganese and Sodium Sulphides in 20 oz. Used in chronic cutaneous eruptions, catarrhal diseases of the respiratory organs, etc. June to October.

**BARÈGES** (Hautes-Pyrénées, France).—Thermal, sulphurous. Temp. 81° to 111° F. (27·2° to 43·8° C.). About 2 grains in 20 oz., chiefly Sodium Sulphide, Sulphate and Chloride, with Barègne similar to Glairine. ‘ Tambour ’ spring used internally, about  $\frac{1}{3}$  grain Sodium Sulphide per 20 oz. Skin diseases and chronic rheumatism. June to September. Imported.

**BELLTHAL** (Rhine Province, Germany).—Alkaline, table Water. About 11 grains in 20 oz., chiefly Sodium, Potassium, Magnesium and Calcium Carbonates. Imported.

**BERKA** (Weimar, Germany).—Chalybeate and sulphurous springs. About 27 $\frac{1}{2}$  and 16 $\frac{1}{2}$  grains respectively in 20 oz., chiefly Calcium Sulphate and Carbonate, with about 0·4 grain Iron Carbonate. Used for chronic rheumatism, anaemia and debility.

**BETHESDA** (Wisconsin, U.S.A.).—About 5·3 grains in 20 oz., chiefly Calcium and Magnesium Bicarbonates. Used in treatment of kidney diseases.

**BILIN** (Bohemia).—Gaseous, alkaline. About 47 grains in 20 oz., chiefly Sodium Carbonate (about 29 grains) and Sulphate, with Calcium and Magnesium Carbonates. Taken for indigestion and acidity. Also drunk as a table Water. May to September. Imported.

**BIRKENSTORF** (Switzerland).—Aperient. Temp. 50° F. (10° C.). About 279 grains in 20 oz., chiefly Magnesium Sulphate (about 191 grains) and Sodium Sulphate (about 61 grains), with Calcium Sulphate and other salts. Imported.

**BIRRESBORN** (Rhine Province, Germany).—Alkaline gaseous spring. About 43 grains in 20 oz., chiefly Sodium Bicarbonate (about 24 grains), with Sodium Sulphate and Magnesium Bicarbonate. Free Carbonic Acid gas. Table Water.

**BOCKLET** (near Kissingen).—Chalybeate. Temp. 50° F. (10° C.). Three springs varying in mineral strength, contain Sodium Chloride and Sulphate, with Calcium and Magnesium Carbonates and about 0·8 grain Iron Carbonate in 20 oz., and much free Carbonic Acid gas. Tonic, useful for anaemic and debilitated patients. May to September.

**BONIFACIUS** (Hesse-Nassau, Germany).—About 122 grains in 20 oz., chiefly Sodium Chloride (about 89 grains), Magnesium Chloride, Calcium Sulphate, Lithium Chloride (about 2 grains), and Magnesium Bromide and Iodide. Stimulates the intestines and urinary organs.

**BONNES** (Basses-Pyrénées, France). (**Eaux Bonnes**).—Thermal. Temp. 72° to 90.5° F. (22.2° to 32.2° C.). Saline and sulphurous. From about 5 to 6 grains in 20 oz., chiefly Sodium and Potassium Chlorides, with Calcium Sulphate, Sodium Silicate and 'Barègine,' with Sulphuretted Hydrogen. Used in chronic bronchitis, pharyngitis, and catarrhal affections of respiratory organs. June to September.

**BORCETTE or BURTSCHIED** (near Aix-la-Chapelle).—Springs similar to those of Aix-la-Chapelle.

**BOURBOULE, LA** (Puy-de-Dôme, France).—Two chief springs, 'Perrière' and 'Choussy.' Arsenical, equal to about 0.16 grain of Sodium Arsenate in 20 oz., also Sodium Chloride and Bicarbonate, about 24 grains of each. Used in affections of the respiratory organs. May to September. Imported.

**BRIDES-LES-BAINS** (Savoy, France).—Muriated-sulphated springs. About 16 grains of Sodium Chloride, 10 grains of Sodium Sulphate, with Calcium and Magnesium Sulphates, and minute quantities of Iron and Arsenic. Tonic with laxative action in large doses. June to September. Imported (both Salts and Water).

**BUDA-PESTH.**—Several springs of bitter Water, such as Hunyadi Janos, Apenta, and Franz Josef, *q.v.* Buda or Ofen (opposite Pesth, Hungary). Thermal. Temp. 141.5° F. (61° C.). Internally and for bathing, chiefly Sodium Sulphate and Carbonate. In gastric catarrh, obstinate constipation, and in rheumatism and eczema.

**BUFFALO LITHIA** (Mecklenburg Co., Va., U.S.A.).—Three springs. Most important is No. 2, which contains about 12 grains in 20 oz., chiefly Calcium Sulphate and Bicarbonate, Potassium Carbonate (about 3½ grains), with Lithium Bicarbonate (about 2½ grains), Sulphuretted Hydrogen and Carbonic Acid gas.

**BUSSANG** (Vosges, France).—Alkaline, ferruginous, mild laxative. About 13 grains in 20 oz., chiefly Sodium, Calcium and Magnesium Carbonates, with about 0.08 to 0.1 grain Iron Carbonate. Imported.

**CAMBRUNNEN** (Taunus).—Gaseous, antacid table Water. Imported.

**CAPVERN** (Hautes Pyrénées, France).—Thermal. Temp. 70° to 76° F. (21.1° to 24.4° C.), chiefly Calcium Sulphate, about 9 grains in 20 oz. Used in gout and gravel.

**CARABANA** (Spain).—Aperient. Chiefly Sodium Sulphate, about 875 grains in 20 oz. Imported.

**CARLSBAD** (Bohemia).—Various springs. Thermal. Hottest is 'Sprudel.' Temp.  $162\cdot5^{\circ}$  F. ( $72\cdot2^{\circ}$  C.). About 21 grains Sodium Sulphate, about 10 grains Sodium Bicarbonate, and about 9 grains Sodium Chloride in 20 oz., with Calcium Carbonate and Carbonic Acid gas. For constipation, liver affections, gout, rheumatism, diabetes. April to September. Imported (both Salts and Water).

**CAUTERETS** (Hautes Pyrénées).—Sulphurous. Thermal. From  $103^{\circ}$  to  $128^{\circ}$  F. ( $39\cdot4^{\circ}$  to  $53\cdot3^{\circ}$  C.). About  $1\frac{3}{4}$  grains in 20 oz., of which about 0·1 grain is Sodium Sulphide. May to October. Imported.

**CHALLES** (Savoy, France).—Cold sulphur Waters. About 11 grains in 20 oz. of which about 4 grains are said to be Sodium Sulphide. In chronic bronchitis, catarrh of throat, and scrofula. June to October. Imported.

**CHARLOTTENBRUNNEN** (Silesia).—Chalybeate. About 7 grains in 20 oz., chiefly Sodium, Calcium, and Iron Carbonates.

**CHÂTELDON** (France).—A gaseous, alkaline table Water. Imported.

**CHÂTEL-GUYON** (Puy-de-Dôme, France).—Alkaline. 'Source Gubler.' About 72 grains in 20 oz., chiefly Calcium Bicarbonate (18 grains), Sodium Bicarbonate, Magnesium and Sodium Chlorides, with Iron Bicarbonate and Carbonic Acid gas. May to October.

**CONDILLAC** (France).—A gaseous, alkaline drinking Water. Imported.

**CONDAL** (Rubinat, Pyrénées, Spain).—Aperient. About 450 grains in 20 oz., chiefly Sodium Sulphate (about 390 grains), with Magnesium Sulphate (27 grains), Sodium Chloride and Calcium Sulphate. Useful in chronic indigestion and affections of the liver and spleen. Imported.

**CONTREXÉVILLE** (Vosges, France).—Several springs, principal is 'Source Pavillon.' About 13 grains Calcium Sulphate, 3 grains Calcium Bicarbonate in 20 oz., with minute quantities of Iron, Arsenic and Calcium Fluoride. For urinary affections and chronic cystitis. May to October. Imported.

**DESAIGNES** (France).—Alkaline. From 27 to 36 grains Sodium Bicarbonate in 20 oz.

**DRIBURG** (Westphalia, Germany).—Chalybeate. About 50 grains in 20 oz., chiefly Calcium Bicarbonate (12 grains) and Sulphate (9 grains), with about  $\frac{1}{2}$  grain Iron Bicarbonate, and much free Carbonic Acid Gas. May to October.

**EILSEN** (Germany).—Sulphurous. 'Julianenbrunnen' contains about 37 grains in 20 oz., chiefly Calcium, Sodium

and Magnesium Sulphates, with Sulphuretted Hydrogen about 2·5 c. in. In gout, rheumatism and paralysis. May to September.

**EMS** (Germany).—Alkaline, muriated, thermal. Temp. from 80° to 120° F. (26·6° to 48·8° C.). Several springs. ‘Krahnchen,’ ‘Kesselbrunnen,’ ‘Fürstenbrunnen,’ ‘Neuequelle,’ all contain about 33 grains in 20 oz., chiefly Sodium Bicarbonate (18½ grains) and Chloride (about 9 grains), with Calcium and Magnesium Bicarbonates and over 500 vols. Carbonic Acid Gas per 1000. In diseases of mucous membranes, catarrh of larynx and bronchi, gouty dyspepsia, cystitis. Imported (Water, Salts and Pastilles).

**ENGHIEN** (Paris).—Sulphurous, containing both Calcium Sulphide and Sulphuretted Hydrogen. For drinking and bathing. Imported.

**EVIAN-LES-BAINS** (Savoy, France).—Alkaline, table Waters. About 2½ grains in 20 oz., chiefly Calcium Carbonate.

**FACHINGEN** (Hesse-Nassau, Germany).—Alkaline: about 47½ grains in 20 oz., chiefly Sodium Bicarbonate (about 35 grains) and Calcium and Magnesium Bicarbonates, with Sodium Chloride. The spring is rich in Carbonic Acid gas. For acidity in the stomach, and in kidney and bladder diseases. Used also as a table Water. Imported.

**FRANZENSBAD** (Bohemia).—Several springs, varying considerably in mineral constituents. ‘Franzensquelle,’ ‘Salzquelle,’ ‘Wiesenquelle’ and ‘Kalte Sprudel’ are for drinking, and contain Sodium Sulphate (24 to 31 grains in 20 oz.), with Sodium Carbonate, and Chloride and Iron Carbonate in varying quantities. The Chalybeate ‘Moor-baths’ are baths containing peat. Used in rheumatism and gout. May to September.

**FRANZ JOSEF** (Buda-Pesth).—Aperient. About 216 grains each of Sodium and Magnesium Sulphates in 20 oz., with Magnesium Chloride, Calcium Sulphate and Sodium Chloride. Imported.

**FRIEDRICHSHALL** (Saxe-Meiningen).—Aperient. According to Liebig contained about 237 grains in 20 oz., chiefly Sodium Chloride (76 grains), Sodium Sulphate (58 grains), Magnesium Sulphate (49 grains), with Magnesium Chloride and Calcium Sulphate. In disorders of the stomach, liver and urinary organs. Imported.

**GASTEIN** (Austria).—Several thermal springs. Temp. from 78·5° to 121° F. (26° to 49·4° C.). About 2¾ grains in 20 oz., of which almost 2 grains are Sodium Sulphate. Chiefly used for bathing. For nervous affections. May to September.

**GEROLSTEIN** (Rhine Province, Germany).—Table Water. About

19 grains in 20 oz., chiefly Sodium, Calcium and Magnesium Carbonates.

**GIESSHÜBLER** (near Carlsbad in Bohemia).—Table Water. About 20 grains in 20 oz., chiefly Sodium, Calcium and Magnesium Bicarbonates.

**GODESBERG** (Rhiue Province, Germany).—Chalybeate, gaseous. ‘Old’ spring contains about  $\frac{1}{4}$  grain Iron Bicarbonate in 20 oz. ‘New’ spring only used for bathing, about 0·4 grain.

**GRIESBACH** (Baden).—Chalybeate, gaseous. About 0·6 grain Iron Bicarbonate in 20 oz., with Sodium Sulphate and Calcium Bicarbonate.

**GUBER** (Srebernik, Bosnia).—Ferruginous and Arsenical. About  $6\frac{1}{2}$  grains in 20 oz., chiefly Ferric Sulphate (about 3 grains), with Aluminium Sulphate, and about 0·05 grain of Arsenious Acid.

**HOMBURG** (Hesse-Nassau, Germany).—Laxative, slightly tonic. For drinking, ‘Elizabeth-Brunnen,’ ‘Kaiser-Brunnen,’ ‘Ludwig-Brunnen,’ ‘Luisen-Brunnen’ and ‘Stahl-Brunnen.’ Varying proportions of mineral constituents; all are rich in Carbonic Acid gas. Chiefly Sodium Chloride, Calcium Carbonate, Magnesium Carbonate and Chloride, with Iron Carbouate. Useful in gouty affections, dyspepsia, hysteria, anaemia and debility. May to September. Water and Salts imported.

**HUNYADI-JANOS** (Buda - Pesth).—Aperient. Chiefly Sodium Sulphate (about 155 grains in 20 oz.), Magnesium Sulphate (about 150 grains), with Sodium Chloride. Habitual constipation. Imported.

**ISCHIA** (Italy).—Principal spring, ‘Gurgitello.’ Thermal. Temp.  $131^{\circ}$  to  $149^{\circ}$  F. ( $55^{\circ}$  to  $65^{\circ}$  C.). About 52 grains in 20 oz., chiefly Sodium Chloride and Bicarbonate, with Carbonic Acid gas. Useful in rheumatism, paralysis, skin diseases, etc. Spring and Summer.

**ISCHL** (Austria).—Brine baths. May to September.

**JODBAD LIPIK** (Slavonia, Hungary).—Alkaline. Thermal.  $147^{\circ}$  F. ( $63\cdot8^{\circ}$  C.). About 28 grains in 20 oz., chiefly Sodium Bicarbonate, with about  $\frac{1}{5}$  grain of Sodium Iodide and Carbonic Acid Gas. For catarrhal affections of mucous membraues, gout, rheumatism, etc.

**JOHANNIS** (Hesse-Nassau).—Alkaline, table Water. Containing chiefly Sodium, Calcium and Magnesium Bicarbonates, with Sodium Chloride.

**KISSINGEN** (Bavaria).—Principal spring, ‘Rakoczy.’ About 82 grains in 20 oz., chiefly Sodium Chloride (about 54 grains), with Potassium, Lithium and Magnesium Chlorides, Calcium Carbonate and Magnesium Sulphate. Also ‘Pandur-Quelle,’

similar, and 'Max-brunnen' weaker. Carbonic Acid Gas. Kissingen bitter Water from 'Soole' springs. For constipation, haemorrhoids, catarrhal conditions of stomach and bowels. May to September. Imported (Salts and Water). **KOSEN** (Saxony).—About 477 grains in 20 oz., chiefly Sodium Chloride (420 grains). Baths, in scrofula.

**KÖNIGSDORFF-JASTRZEMB** (Silesia).—Saline. About 109 grains in 20 oz., chiefly Sodium Chloride, with a little Magnesium Bromide and Iodide.

**KRANKENHEIL** (Bavaria).—About 7 grains in 20 oz., chiefly Sodium Bicarbonate and Chloride. In scrofulous skin diseases. May to October.

**KREUZNACH** (Rhine Province, Germany).—Several springs. 'Elizabethquelle,' chiefly used for drinking. About 117 grains in 20 oz., chiefly Sodium Chloride (about 90 grains), with Calcium and Magnesium Chlorides and a little Bromide and Iodide. The mother lye, from which the common salt has been crystallised, about 3100 grains in 20 oz., a large amount being Calcium Chloride. Tonic to lymphatic system. In syphilis, skin diseases, rheumatism and paralysis. Water, Salt and Brine are all imported.

**KRONDORF** (Bohemia).—Table Water. About 21 grains in 20 oz., chiefly Sodium, Calcium and Magnesium Bicarbonates, with Carbonic Acid gas. In gout and as a diuretic. Imported.

**KRONENQUELLE** (Obersalzbrunn, Silesia).—Alkaline. About 20 grains in 20 oz., chiefly Sodium Bicarbonate (about  $7\frac{1}{2}$  grains), with Calcium and Magnesium Bicarbonates, Sodium Sulphate, Lithium Carbonate and Carbonic Acid Gas. In nephritic and arthritic affections, and in gouty diathesis. May to September. Imported.

**KRONTHAL** (Germany).—Table Water. Chiefly Sodium Chloride, with Calcium Carbonate and Carbonic Acid gas. Imported.

**LABASSÈRE** (Hautes Pyrénées).—Sulphurous. Chiefly Sodium Chloride, with about  $\frac{1}{2}$  grain Sodium Sulphide in 20 oz. Bronchial and laryngeal catarrh. June to October.

**LANDECK** (Silesia).—Thermal.  $66^{\circ}$  to  $84.2^{\circ}$  F. ( $18.8^{\circ}$  to  $29^{\circ}$  C.). Under 2 grains in 20 oz., chiefly Sodium Bicarbonate and Sulphate, with traces of Sulphide and Sulphuretted Hydrogen. For bronchial catarrh. Also 'moor-baths,' for rheumatism.

**LANGENBRÜCKEN** (Baden).—Chiefly Sodium, Magnesium and Calcium Sulphates, with Carbonic Acid Gas and traces of Sulphuretted Hydrogen. For haemorrhoidal conditions, bronchial irritation and rheumatism.

**LEUK or LOÈCHE-LES-BAINS** (Switzerland).—Thermal.  $102^{\circ}$  to  $124^{\circ}$  F. ( $48.8^{\circ}$  to  $51.1^{\circ}$  C.). About 18 grains in 20 oz., chiefly

**Calcium Sulphate, with Magnesium Sulphate.** In chronic skin affections. June to September.

**LEVICO** (Austrian Tyrol).—Arsenical and Ferruginous. Two strengths, 'strong' and 'mild.' The strong contains about 0·07 grain Arsenious Anhydride, with about 33 grains Iron salts in 20 oz.; the mild about 0·008 grain Arsenious Anhydride, with about 8 grains of Iron salts. June to September. Imported.

**LIPPIK.**—See Jodbad Lipik.

**LIPPSPRINGE** (Westphalia, Germany).—'Arminiusquelle' contains about 21 grains in 20 oz., chiefly Calcium and Sodium Sulphates. In bronchial irritation and tuberculosis. May to September.

**LUCCA** (Italy).—Thermal. 98° to 129° F. (36·6° to 53·8° C.). About 11½ grains in 20 oz., chiefly Calcium and Magnesium Sulphates, with Sodium Chloride. Baths in gout and rheumatism. June to September.

**LUHATSCHOWITZ** (Moravia, Austria).—Several springs. Vincenz-, Amand- and Johann-Brunnen are the chief. Contain in 20 oz. from about 27 to 39 grains of Sodium Carbonate and 21 to 39 grains of Sodium Chloride, with Calcium Carbonate, also Sodium Iodide and Bromide, and Carbonic Acid gas. In bronchial, gastric and uterine catarrh, congested liver and haemorrhoids. May to September.

**MARCOLS** (France).—Alkaline. 21 to 23 grains Sodium Bicarbonate in 20 oz.

**MARIENBAD** (Bohemia).—Chief springs are 'Kreuz-brunnen' and 'Ferdinand-brunnen.' The first about 92 grains in 20 oz. Second about 102 grains in 20 oz., chiefly Sodium Sulphate (44 to 45 grains), Sodium Bicarbonate (14 to 16 grains), with Sodium Chloride, and Calcium and Magnesium Carbonates. Laxative. Useful in obesity, dyspepsia, gravel, gout and chronic constipation. May to September. Imported (Salts and Water).

**MEINBERG** (Germany).—Several springs, varying in strength. Contain Sodium and Magnesium Sulphates, with Calcium Sulphate and Carbonate. Sulphurous mud-baths are used. For scrofula, rheumatism and gout, facial neuralgia, and generally tonic. May to September.

**MERGENTHEIM** (Wurtemberg).—Aperient. About 119 grains Sodium Chloride; 33 grains Sodium Sulphate; and about 22 grains Magnesium Sulphate in 20 oz., with Carbonic Acid gas. For chronic constipation, catarrh of stomach and intestines, etc.

**MONDORF** (Luxembourg).—Muriated, for drinking and bathing. Temp, 77° F. (25° C.), chiefly Sodium Chloride about 78 grains in 20 oz., with Calcium Chloride and Sulphate, and Magnesium Bromide and Chloride.

**MONT DORÉ** (France).—Source ‘Madeleine’ and source ‘Bar-don,’ mostly used internally. About 18 grains in 20 oz. Thermal Waters, temp. up to 113° F. (45° C.), used for baths, drinking, inhalations, etc. For chronic laryngitis and bronchitis. June to September.

**NAUHEIM** (Germany).—‘Kur-brunnen’ and ‘Karls-brunnen,’ chiefly for drinking. Containing Sodium Chloride 87 to 130 grains in 20 oz. and Calcium Chloride, with Carbonic Acid Gas. The bath Waters are about double this strength. Temp. 82° to 95.5° F. (27.7° to 35° C.). In cardiac affections, rheumatism, etc. A special form of treatment is adopted here, known as the ‘Nauheim method.’ May to September.

**NENNDORF** (Germany).—Sulphurous. ‘Trinkquelle’ only one used for drinking. About 25 grains in 20 oz., chiefly Sodium, Magnesium and Calcium Sulphates, with Calcium Chloride and Sulphuretted Hydrogen. ‘Rodenberg’ brine considerably stronger and used for bathing. For rheumatism, gout, cutaneous affections and catarrh of respiratory organs. May to September.

**NEUENAHR.**—*See APOLLINARIS.*

**OBERSALZBRUNN** (Salzbrunn, Silesia).—Alkaline. Chief spring ‘Oberbrunnen,’ containing about 19 grains Sodium Bicarbonate in 20 oz., with Sodium Sulphate, Magnesium and Calcium Bicarbonates and a small quantity of Lithium Bicarbonate. In nephritic affections and gouty diathesis. May to September. Imported.

**OREZZA** (Corsica).—Gaseous, chalybeate. A kind of ferruginous Seltzer Water agreeable to drink. Chiefly Calcium Carbonate, with about 1 grain of Iron Carbonate in 20 oz.

**PFAFFERS.**—*See RAGATZ-PFAFFERS.*

**PLOMBIÈRES** (Vosges, France).—Thermal. 77° to 155° F. (25° to 68.3° C.). About 2½ grains in 20 oz., chiefly Sodium, Calcium and Magnesium Silicates, with Sodium Sulphate. Principally used as baths. In treatment of gastralgia, dyspepsia, and catarrhal enteritis.

**POUGUES** (Loire, France).—Alkaline (calcareous). ‘St. Leger’ spring contains about 15 grains Calcium Bicarbonate and 6 grains Sodium Bicarbonate in 20 oz., with Magnesium Bicarbonate and Chloride. Used in dyspepsia, chronic diarrhoea, and urinary affections.

**PULLNA** (Bohemia).—Saline, purgative. About 310 grains in 20 oz., chiefly Sodium and Magnesium Sulphates, with Magnesium Chloride and Carbonate, and Carbonic Acid Gas. Useful in obstinate constipation. Imported.

**PYRMONT** (Waldeck).—Several springs, chalybeate and muriated. ‘Hauptquelle’ and ‘Helenen-quelle’ are the two chief

chalybeate springs used for drinking. They contain from  $\frac{1}{2}$  to  $\frac{1}{2}$  grain Iron Carbonate in 20 oz. The muriated Waters contain varying quantities of Sodium Chloride from 63 grains in 'Trinkquelle' to 288 grains in 'Bohrlechhsoole' in 20 oz. In anaemia, debility, scrofula and functional nervous affections.

**RAGATZ-PFAFFERS** (Switzerland).—Thermal. Temp. 98° F. (36.6° C.). About 3 grains in 20 oz., chiefly Magnesium and Sodium Carbonates, with Sodium and Calcium Sulphates. Rich in Nitrogen. June to September.

**RAKOCZI.**—See KISSINGEN.

**RECOARO** (Venetia).—Chalybeate. About 25 grains in 20 oz., chiefly Calcium Sulphate and Carbonate, Magnesium Sulphate and about  $\frac{1}{3}$  grain Iron Carbonate, with Carbonic Acid gas. May to October.

**REICHENHALL** (Bavarian Alps).—Numerous saline springs, most important being 'Edelquelle,' which contains about 2237 grains in 20 oz., of which about 2150 are Sodium Chloride. Chiefly used for baths in scrofula, catarrh of the respiratory organs, etc. May to September.

**RENAISON** (France).—Table Water containing Sodium and Calcium Bicarbonates.

**RHENS** (Rhine Province, Germany).—Muriated, alkaline, table Water.

**RIPPOLDSAU** (Baden).—Three springs used for drinking, 'Josephsquelle,' 'Leopolds-quelle,' 'Wenzelquelle.' Chalybeate. About 33 grains in 20 oz., chiefly Calcium Bicarbonate, Sodium Sulphate and Magnesium Sulphate, with about  $\frac{1}{2}$  grain Iron Bicarbonate. For anaemia, also useful in pulmonary catarrh. 'Natrinoine' and 'Schwefelnatrinoine' artificially carbonated and sulphated to counteract tendency to constipation. May to September.

**ROISDORF** (Rhine Province, Germany).—A muriated, alkaline table Water. Chiefly Sodium Chloride and Sodium Carbonate.

**ROS BACH** (near Homburg, Germany).—A muriated, alkaline table Water. Chiefly Sodium Chloride and Calcium Carbonate. Imported.

**ROYAT** (Puy-de-Dôme, France).—Alkaline. Thermal. Temp. 68° to 95° F. (20° to 35° C.). Several springs, 'Eugénie,' 'Cæsar,' 'St. Mark,' 'St. Victor.' Source 'Eugénie' most highly mineralized, contains about 48 grains in 20 oz., chiefly Sodium Bicarbonate and Chloride, with Calcium Bicarbonate, and Carbonic Acid gas. For gout, uric acid diathesis, dyspepsia, chronic laryngitis and bronchitis. May to September. Imported.

**RUBINAT** (Pyrénées, Spain).—Natural, purgative Water. About 909 grains in 20 oz., chiefly Sodium Sulphate (about 840 grains) and Magnesium Sulphate (about 28 grains), with Sodium Chloride and Calcium Sulphate. For constipation, congestion, gastric fever, etc. Imported.

**SAINT BOÈS** (Basscs-Pyrénées, France).—Sulphurous, bituminous. About 14 grains in 20 oz., Sodium Sulphide, with Sulphuretted Hydrogen, Iodine and Arsenic. For bronchitis, laryngitis, and in pulmonary tuberculosis.

**SAINT GALMIER** (France).—Alkaline table Water, containing Sodium, Calcium and Magnesium Bicarbonates, and may be obtained charged with additional Carbonic Acid gas. Imported.

**SAINT GERVAIS** (France).—Thermal. Temp. 102° to 108° F. (38.8° to 42.2° C.). Three springs, ‘Source de Mey,’ ‘de Gontard,’ ‘du Torrent.’ Contain Sodium Sulphate, Sodium Chloride and Calcium Sulphate. In cutaneous affections, chronic rheumatism and dyspepsia. June to September.

**SALIES-DE-BÉARN** (Basses-Pyrénées, France).—Brine baths, containing about 1925 grains Sodium Chloride, with Magnesium and Potassium Chloride, in 20 oz.

**SALINS-LES-BAINS** (Jura, France).—Saline. About 198 grains Sodium Chloride in 20 oz., with about  $\frac{1}{4}$  grain Potassium Bromide, and traces of Sodium Iodide. For scrofulous affections. May to September.

**SALVATOR** (Eperies, Hungary).—Alkaline, gaseous. With about  $2\frac{1}{2}$  grains Sodium Bicarbonate, 8 grains Magnesium Bicarbonate and 15 grains Calcium Bicarbonate in 20 oz. For urinary affections, etc.

**SANKT-MORITZ or SAINT MORITZ** (Upper Engadine, Switzerland).—Three springs, ‘Alte’ or ‘Badequelle,’ ‘Paracelsusquelle’ and the recently discovered ‘Surpunt-quelle.’ Slightly chalybeate. About 23 grains in 20 oz., chiefly Calcium, Magnesium and Sodium Bicarbonates, with Sodium Sulphate and about  $\frac{1}{4}$  grain Iron Carbonate. June to September.

**SARATOGA** (U.S.A.).—Alterative. Chiefly Sodium Chloride, Calcium Bicarbonate, Magnesium Bicarbonate, with Sodium Iodide and Bromide. Useful in glandular and visceral obstructions and in skin diseases. ‘Congress’ and ‘A’ springs are bottled for export.

**SAUERBRUNNEN** (Goslar-am-Hartz, Germany).—A natural, mineral, table Water, containing chiefly Magnesium Bicarbonate and Sulphate.

**SCHINZNACH** (Switzerland).—Strongly sulphurous. Thermal. 82.4° to 95° F. (28° to 35° C.), Chiefly Sodium Sulphate, with Potassium and Magnesium Chlorides, and about  $\frac{3}{4}$

grain Calcium Sulphide in 20 oz. Rich in Sulphuretted Hydrogen. For chronic eczema and all skin eruptions, gout and rheumatism. May to September.

**SCHLANGENBAD** (Nassau, Germany).—Simple thermal Water. Temp.  $81\cdot5^{\circ}$  to  $89^{\circ}$  F. ( $27\cdot2^{\circ}$  to  $31\cdot6^{\circ}$  C.). About  $3\frac{1}{2}$  grains in 20 oz., chiefly Sodium Chloride. Rich in Oxygen and Nitrogen. Useful in nervous irritability, is stated to have a sedative and beneficial influence on the skin. June, July and August.

**SCHWALBACH** (Nassau, Germany).—Several springs. ‘Stahl-brunnen’ and ‘Weinbrunnen’ mostly used internally. ‘Paulinenbrunnen’ and ‘Rosenbrunnen’ are used for baths. Chalybeate. Chiefly Magnesium and Calcium Bicarbonates, with  $\frac{1}{2}$  to  $\frac{3}{4}$  grain Iron Bicarbonate in 20 oz. and excess of Carbonic Acid gas. For anaemia and leucorrhœa. June, July and August.

**SEIDLITZ** (Bohemia).—Bitter aperient. About 140 grains in 20 oz., chiefly Magnesium Sulphate (about 100 grains) with Sodium Sulphate and Calcium Sulphate and Carbonate.

**SELTERS** (Nassau).—A muriated, alkaline, table Water, containing chiefly Sodium Chloride about 20 grains in 20 oz., with Sodium, Calcium and Magnesium Bicarbonates and excess of Carbonic Acid gas. Imported.

**SODEN** (Nassau, Germany).—Several springs. ‘Milch-,’ ‘Warm-,’ ‘Wilhelms-’ and ‘Sool-brunnen.’ Saline, containing chiefly Sodium Chloride from 22 to 140 grains in 20 oz., with Calcium and Magnesium Carbonates, and from 0.2 to 0.7 grain Iron Carbonate. For chronic laryngitis, bronchitis, gout and scrofula. May to September.

**SPA** (Belgium).—Several springs, principal are ‘Pierre le Grand’ and ‘Prince de Condé.’ Chalybeate, alkaline. About 49 grains in 20 oz., chiefly Magnesium, Calcium and Sodium Carbonates, with about  $\frac{1}{2}$  to 1 grain Iron Bicarbonate. In anaemia, menorrhagia and debility. May to October.

**TARASP** (Switzerland).—Several springs. ‘Lucius’ and ‘Eme-rita’ are sulphated, ‘Bonifacius’ is chalybeate. They contain about 19 grains Sodium Sulphate, 36 grains Sodium Bicarbonate, 32 grains Sodium Chloride in 20 oz., with other salts. Bonifacius contains about 0.4 grain Iron Carbonate in 20 oz. Carbonic Acid gas. Useful in obesity, gout, rheumatism and skin diseases, anaemia, etc. June to September.

**TAUNUS** (Frankfort).—A muriated, alkaline, table Water, containing chiefly Sodium Chloride, with Calcium Carbonate and excess of Carbonic Acid gas.

**THONON** (France).—Weakly mineralised Waters, similar to those of Evian-les-Bains,

**TCHITLI** (Turkey).—About 55 grains in 20 oz., chiefly Sodium Bicarbonate.

**TOEPLITZ or TEPLITZ** (Bohemia).—Alkaline, thermal. Temp. 83° to 114° F. (28·3° to 45·5° C.). About 6 grains total solids in 20 oz., chiefly Sodium Carbonate about 3½ grains. Used in rheumatism, gout, paralysis and nervous affections. May to September.

**VALS** (France).—Several springs varying in mineral strength from 27 grains to 77 grains in 20 oz. ‘Saint-Jean,’ ‘Précieuse,’ ‘Desirée,’ ‘Rigolette,’ and ‘Madeleine’ are the sources mostly used in England. The Waters contain chiefly Sodium Bicarbonate, with Calcium and Magnesium Bicarbonates, and Carbonic Acid gas. In dyspepsia and gastric catarrh. May to October. Imported.

**VERNET** (Pyrénées Orientales, France).—Thermal sulphur springs, 90° to 154° F. (32·2° to 67·7° C.). About ½ grain Sodium Sulphide in 20 oz. Used for drinking and bathing. For rheumatism, cutaneous eruptions and affections of respiratory organs.

**VICHY** (France).—Alkaline, thermal. Temp. from 57° to 106° F. (13·8° to 41·1° C.). Numerous springs, ‘Grande-Grille,’ ‘L'Hôpital,’ ‘Celestins,’ ‘Hauterive,’ ‘Saint Yorre.’ They contain from 70 to 80 grains in 20 oz., chiefly Sodium Bicarbonate from 35 to 45 grains, with Sodium Chloride and other salts. Used in kidney diseases, diabetes, gouty, hepatic and urinary diseases. For drinking and bathing. May to October. Imported. (Pastilles, Salts and Water.)

**VILLACABRAS** (Spain).—Aperient Water, contains chiefly Sodium Sulphate.

**VITTEL** (Vosges, France).—Calcareous springs resembling those of Contrexéville. May to September. Imported.

**WEILBACH** (Nassau, Germany).—Two springs, ‘Schwefelquelle’ and ‘Natronlithionquelle.’ The first, a sulphur Water, contains about 14 grains total solids in 20 oz., with Sulphuretted Hydrogen. The other about 25 grains in 20 oz., chiefly Sodium Chloride and Bicarbonate, with a small quantity of Lithium Bicarbonate. For haemorrhoids, gout, rheumatism and urinary complaints. Imported.

**WIESBADEN** (Nassau, Germany).—Several springs, the principal being ‘Kochbrunnen.’ Saline. Thermal. 100° to 156° F. (37·7° to 69° C.). About 79 grains in 20 oz., chiefly Sodium Chloride (about 65 grains), with Calcium and Magnesium Chlorides. In chronic gout and rheumatism, catarrh of larynx and bronchitis. ‘Wiesbadener Gichtwasser,’ a preparation made from Kochbrunnen with the addition of about 70 grains Sodium Bicarbonate in 20 oz. Imported.

**WILDBAD** (Wurtemberg).—Thermal. Temp. 91·5° to 104·5° F. (33° to 40° C.). Numerous springs. About 4 grains in 20 oz., chiefly Sodium Chloride. Baths are used in chronic rheumatism and gout and paraplegic paralysis of lower extremities. June to September.

**WILDUNGEN** (Waldeck, Germany).—Several springs. Principal are 'Helenen-quelle' and 'Georg-Victor-quelle,' containing varying quantities of minerals, chiefly Calcium, Magnesium and Sodium Bicarbonates. Used in cystitis, pyelitis, renal and vesical disorders.

**WITTEKIND** (Halle, Saxony).—Saline Water for drinking, containing about 3½ p.c. salt. Also mixed with Mother-lye for baths.

## CLASSIFICATION OF MINERAL WATERS.

Comparatively Free from Salts.		Bitter Saline.
Buxton.	Leamington.	
Evian-les-Bains.	Llangammarch.	
Gastein.	Mergentheim.	
Malvern.	Mondorf.	
Schlangenbad.	Nauheim.	
Thonon.	Pyrmont.	
Wildbad.	Reichenhall.	
Saline.	Salies-de-Béarn.	
Achselmannstein.	Salins-les-Bains.	
Adelheidsquelle.	Saratoga.	
Aix-la-Chapelle.	Selters.	
Arnstadt.	Soden.	
Baden.	Spa.	
Baden-Baden.	Wiesbaden.	
Bath.	Wittekind.	
Bonifacius.	Woodhall.	
Bonnes.		Aesculap.
Borcette, or Burtscheid.		Apenta.
Brides-les-Bains.		Arabella.
Buda, or Ofen.		Birmenstorf.
Carlsbad.		Buda-Pesth.
Homburg.		Carabana.
Ischia.		Condal.
Ischl.		Franz-Josef.
Kissingen.		Frederichshall.
Kosen.		Hunyadi.
Koenigsdorf-Jastrzemb.		Marienbad.
Krankenheil.		Mergentheim,
Kreuznach,		Pullna,

Rubinat.  
Seidlitz.  
Villacabras.

**Alkaline, and Gaseous  
Alkaline.**

Bellthal.  
Bilin.  
Birresborn.  
Bussang.  
Châtel-Guyon.  
Ems.  
Fachingen.  
Franzensbad.  
Ischia.  
Iodbad Lipik.  
Johannis.  
Krondorf.  
Kronenquelle.  
Luhatschowitz.  
Marcols.  
Marienbad.  
Obersalzbrunn.  
Roisdorf.  
Rosbach.  
Royat.  
Saint Galmier.  
Salvator.  
Selters.  
Tchitli.  
Toëplitz.  
Vals.  
Vichy.  
Wildungen.

**Alkaline and Calcareous.**

Bethesda.  
Buffalo Lithia.  
Capvern.  
Contrexéville.  
Lippspringe.  
Lucca.  
Pougues.  
Vittel.

**Arsenical.**

Bourboule.  
Brides-les-Bains,  
Bussang.  
Guber.

Levico.  
Mont Dorc.  
Vals.

**Chalybeate.**

Alet.  
Alexanderbad.  
Alexisbad.  
Auteuil.  
Berka.  
Bocklet.  
Brides-les-Bains.  
Bussang.  
Charlottenbrunnen.  
Driburg.  
Flitwick.  
Franzensbad.  
Godesberg.  
Griesbach.  
Guber.  
Harrogate.  
Orezza.  
Pyrmont.  
Recoaro.  
Rippoldsau.  
Saint Moritz.  
Schwalbach.  
Soden.  
Spa.  
Tarasp.

**Sulphurous.**

Aix-la-Chapelle.  
Aix-les-Bains.  
Allevard.  
Baden.  
Bagnères-de-Luchon.  
Barèges.  
Berka.  
Bonnes.  
Cauterets  
Challes.  
Eilsen.  
Enghien.  
Harrogate.  
Labassère.  
Landeck.  
Meinberg.  
Nenndorf.  
Saint Boès.  
Strathpfeffer.

Schinznach.  
Vernet.  
Weilbach.

**Lithiated.**

Baden-Baden.  
Bonifacius.  
Buffalo Lithia.  
Franzensbad.  
Kissingen.  
Kronenquelle.  
Ober Salzbrunn.  
Weilbach.

**Thermal Springs.**

Aix-la-Chapelle, 113° to 133° F.  
(45° to 56° C.).  
Baden-Baden, 124° to 150° F.  
(51·1° to 65·5° C.).  
Bagnères-de-Luchon, 61° to  
152° F. (16·1° to 66·6° C.).  
Barèges, 81° to 111° F. (27·2° to  
43·8° C.).  
Bath, 88° to 120° F. (31·1° to  
48·8° C.).  
Bonnes, 72° to 90·5° F. (22·2°  
to 32·2° C.).  
Buda or Ofen, 141·5° F. (61°C.).  
Buxton, 82° F. (27·7° C.).  
Capvern, 70° to 76° F. (21·1°  
to 24·4° C.).  
Carlsbad 'Sprudel,' 162° F.  
(72·2° C.).  
Cauterets, 103° to 128° F. (39·4°  
to 53·3° C.).  
Ems, 80° to 120° F. (26·6° to  
48·8° C.).  
Gastein, 78° to 121° F. (26° to  
49·4° C.).  
Ischia, 131° to 149° F. (55° to  
65° C.).  
Iodbad Lipik, 147° F. (63·8° C.).  
Landdeck, 66° to 84° F. (18·8° to  
29° C.).  
Leuk or Loëche-les-Bains, 102°  
to 124° F. (48·8° to 51·1° C.).  
Lucca, 98° to 129° F. (36·6° to  
53·8° C.).  
Mondorf, 77° F. (25° C.),

Mont Doré, up to 113° F. (45°  
C.).  
Nauheim, 82° to 95·5° F. (27·7°  
to 35° C.).  
Plombières, 77° to 155° F. (25°  
to 68·3° C.).  
Ragatz Pfaffers, 98° F. (36·6° C.).  
Royat, 68° to 95° F. (20° to  
35° C.).  
Saint Gervais, 102° to 108° F.  
(38·8° to 42·2° C.).  
Schinznach, 82·4° to 95° F.  
(28° to 35° C.).  
Schlangenbad, 81·5° to 89° F.  
(27·2° to 31·6° C.).  
Toëplitz, 83° to 114° F. (28·3°  
to 45·5° C.).  
Vernet, 90° to 154° F. (32·2° to  
67·7° C.).  
Vichy, 57° to 106° F. (13·8° to  
41·1° C.).  
Wiesbaden, 100° to 156° F.  
(37·7° to 69° C.).  
Wildbad, 91·5° to 104° F. (33°  
to 40° C.).

**Table Waters.**

Apollinaris.  
Bellthal.  
Bilin.  
Birresborn.  
Cambrunnen.  
Condillac.  
Evian-les-Bains.  
Fachingen.  
Gerolstein.  
Giesshubler.  
Johannis.  
Krondorf.  
Kronthal.  
Malvern.  
Marcols.  
Renaison.  
Rhens.  
Roidsdorf.  
Rosbach.  
Saint Galmier  
Selters.  
Taunus.  
Thonon,

## SECTION A.

## THERAPEUTICAL CLASSIFICATION OF REMEDIES.

**Alteratives.**—Medicines which gradually change and correct a morbid condition of the organs, so that abnormal conditions become normal and metabolism is increased.

*Ammonium*.—Ammonii Chloridum.

*Antimony*.—Antimonii Oxidum, A. Sulphuratum, A. Taratarum.

*Arsenie*.—Acidum Arseniosum, Injectio Ferri Arsenatis Solubilis, Liquor Arsenicalis, Liquor Arsenici Hydrochloricus, Liquor Sodii Arsenatis, Sodii Cacodylas.

*Caleum*.—Calcii Chloridum, Calcii Hypophosphis, Calcii Sulphidum.

*Iodine and the Iodides*.

*Iron Salts*.

*Mercury*.—Hydrarg. c. Cretâ, Pilula Hydrarg., Hydrarg. Perchloridum and Subchloridum, Hydrarg. Iodidum Rubrum.

*Phosphorus and the Hypophosphites*.

*Potassium Salts*.

*Sulphur*.—Præcipitatum, Sublimatum and Sulphides.

*Vegetable*.—Caffeina, Coca, Dulcamara, Guaiacum, Hemidesmus, Mezereum, Sarsaparilla, Sassafras, Taraxacum.

*Electics*.—Iridin, Leptandrin, Phytolaccin, Podophyllin.

**Anæsthetics**.—They are divided into *General* (by inhalation) and *Local* (by spray or other application to the part). **GENERAL ANÆSTHETICS** abolish consciousness and reflex action, and so prevent the perception of painful and other stimuli in the sensory centres: Æther, Æther Methylatus (sp. gr. 0·717), Æthyl Bromidum, Æthyl Iodidum, A.C.E. Mixture, Chloroform, Carbon Tetrachloride, Kelene, Methylene, Narcotile, Nitrous Oxide Gas, Pental, Regnauld's Anæsthetic Mixture, Soemnoform. **LOCAL ANÆSTHETICS** prevent the reception of stimuli by the peripheral terminations of sensory nerves: Acid. Carbolic., Æther (spray), Æther Methylatus (sp. gr. 0·717), Æther Methylicus, Æthoxycaffeinum, Æthyl Bromidum, Æthyl Chloridum, Anaesthesia, Anæsthyl, Aromatic Oils, Benzoyl-pseudotropine (Tropacocaine), Chloretone, Cocainæ Hydrochloridum, Cocainæ Phenylas, Erythrophleinæ Hydrochloridum, Euaine Hydrochloride (A) and (B), Euguiform, Guaiacol, Guaiacyl, Holocaine Hydrochloride, Ice, Iodoform, Kelene, Menthol, Methyl Chloridum, Nirvanin, Nirvocidine, Orthoform, Orthoform New, Tropacocaine, Thymol.

**Analgesics or Anodynes**.—Medicines which alleviate pain by lessening the excitability of nerves or nerve centres: Acetanilidum, Acid. Carbolic., Aconitum, Aconitina, Æthyl Chlo-

ridum, Agathin, Amyl Nitris, Antipyrine, Apolysin, Aristochin, Asaprol, Atropina, Belladonna, Bromides, Brucine, Butyl-Chloral Hydras, Caffeina, Cajuputi and Carophylli Ol., Camphor, Cannabis Indica, Chloral Hydras, Chloroform, Cimicifuga, Citrophen, Cocainæ Phenylas, Codeina, Codeinæ Iodas, Conina, Conium, Creosotum, Euquinine, Exalgin, Gelsemium, Ipecac. Pulvis Compositus, Kryofin, Lactophenin, Lupulus, Hyoscyamus, Malakin, Methylene Blue, Morphina, Opium, Papaver, Phenacetin, Phenyl-urethane (Euphorin), Piscidia, Pyramidon, Quinina, Salipyrin, Salophen, Saloquinine, Scopola, Solanine, Spiritus Ætheris, Tolypyrrin, Veratrina.

**Anaphrodisiacs.**—Medicines which diminish the sexual passion : Ammonii Bromidum, Belladonna, Camphora, Conium, Digitalis, Hyoscyamus, Lupulinum, Potassii Bromidum, Potassii Iodidum, Sodii Bromidum, Sodii Iodidum, Stramonium, Tabacum ; also alkalis, hypnotics, depressants.

**Anhidrotics.**—Medicines which check perspiration : Acid. Acetic., Acid. Camphoric, Acid. Phosph. Dil., A. Salicylic, A. Sulphuric. Dilut., A. Tannic., Agaricus, Agaricin, Atropina, Belladonna, Cotoin, Ergot, Ferri Sulphas, Ferri Mist. Comp., Guaiacol Camphorate, Hæmatoxyli Decoct., Hyoscyamus, Paraphenetidin Camphorate, Pyramidon Mono- and Bi-Camphorate, Picrotoxinum, Quinina, Scopola, Stramonium, Strychnina, Zinci Oxidum.

**Antacids.**—Agents which reduce the acidity of the gastric contents : Ammonia, Ammon. Spirit. Aromatic., A. Carbonas, Bismuthi Trochiseus, Calcii Hydras, Calcis Liquor, C. Carbonas Precipitatus, C. Saccharatus Liquor, Creta Præparata, Lithii Carbonas, Lithii Citras, Magnesia, M. Carbonas, Potassæ Liquor, P. Bicarbonas, P. Carbonas, Pot. Citratis, Pot. Tartras, Sapo Durus, Sodii Bicarbonas, Sodii Phosphas, Sodii Carb.

*Mineral Waters.*—Contrexéville, Ems, Fachingen, Tarasp, Vichy.

**Antalkalines.**—Medicines which increase acidity in the contents of the stomach or in the urine : Acid. Benzoic., A. Hydrochlor. Dil., A. Nit. Dil., A. Phosphoric. Dilut., A. Sulphuric. Dilut., Ammon. Benz., Potass. Benz., Sodii Benz.

**Antemetics.**—See Sedatives, Stomachic.

**Anthelmintics.**—Medicines which destroy intestinal worms (Vermicides), or expel them from the alimentary canal (Vermifuges).

**VERMICIDES: Ascarides or Thread Worms.**—Acid. Carbolic., Areca, Arecoline Hydrobromide ; Enema—Aceti, Ferri Perchloridi, F. Sulphatis, Olivæ Olei, Quassiae, Sodii Chloridi, Ol. Ricini and Terebinthinæ ; Santoninum.

**Round Worm.**—Areca, Santoninum.

**Tape Worm.**—Acid Embelicum, Cusso, Embelia Ribes, Ammonii Embelas, Extractum Filicis Liquidum, Gra-

nati Cort., Pelletierinæ Sulphas and Tannas, Kamala, Terebinthinæ Oleum.

**VERMIFUGES:** Areca, Butea, Calomel, Cambogia, Jalapa, Nucis Juglandis Spiritus, Ricini Oleum, Scammonium, Thymol Carbonate.

**Antidotes** are mentioned under the several poisonous drugs.

**Antilithics.**—Medicines which counteract a tendency to the formation of Calculi, or deposition of urinary sediments: Acid. Benzoic, Acid. Nitric. Dil., Acid. Phosph. Dil., Ammon. Benz., Cystamine, Hexamethylenetetramine, Lithii Liq. Carbonatis, Lithii Benzoas, Lithii Carb., Lithii Citras, Lithii Guaiacas, Hippuras, Quinas, Salicylas, and Tartras Acid., Magnesia, Mag. Carbonas, Magnes. Liq. Efferv., Piperazine, Piperazine Quinate, Piperidine Tartrate Acid, Potassii Acetas, Potassii Bicarb., Potassii Carb., Potassæ Liquor, Sapo Durus, Soda Tartarata, Sodii Benzoas, Sodii Bicarb., Sodii Citro-tart. Efferv., Sodii Phosphas, Urea, Uresin, Urol, Urotropine.

**Mineral Waters.**—Mergentheim, Neuenahr, Selters, Tchitli, Vals, Vichy, Wildungen.

**Antiperiodics.**—Medicines which have the property of preventing the periodical return of fever: Acid. Arsenios., Bebeerinae Sulph., Berberis, Cinchona, Cinchonidine Salicylate, Ferri Arsenio-Citras Ammoniata, Ferri Arsenatis Solubilis Inj., Narcotina, Nectandræ Cort., Quinine Salts, Picrorhiza, Salicin.

**Antipyretics.**—Medicines which reduce and control the temperature in fever: Absinthin, Absinthium, Acetanilidum, Acetopyrin, Acids, Acid Anisic, Acid. Salicylic., Aconitum, Ammon. Benz., Ammonii Salicylas, Ammonol, Ammonol Bromide, Lithiate and Salicylate, Antipyrine Camphorate, Antisepsin, Antimonium Tartaratum, Apolysin, Aristochin, Asaprol, Aspirin, Camphor Salicylate, Chinaphenin, Citrophen, Euquinine, Iodopyrin, Kryofin, Lactophenin, Malakin, Magnesii Benzoas, Paraphenetidin Agarate and Camphorates, Phenalgin, Phenosal, Phezin, Piperinum, Phenacetin, Phenazonum, Phenocoll Hydrochloridum, Potassii Citras, Pyramidon, Pyramidon Mono- and Bi-Camphorate and Salicylate, Pyrantin, Pyrodin, Quebracho, Quinina, Resorcin, Salicin, Salol, Salophen, Saloquinine, Sodii Anisas, Sodii Di-Thiosalicylas, Sodii Paracresotinas, Sodii Salicylas, Sodii Sulphocarbolas, Spirit. Æther. Muriaticus, Spirit. Æther. Nitrosi, Spirit. Rectificatus, Thallinæ Sulphas, Tolyppyrin, Triphenine.

**Antiseptics.**—Agents which prevent decomposition by inhibiting the growth of Micro-organisms: Acid. Benzoicum, Acid. Boricum, Acid. Carbolicum, Acid. Chromicum, Acid. Cresotinicum, Acid. Cresylicum, Acid. Hydrochloricum, Acid. Nitricum, Acid. Oxynaphthoicum, Acid. Pyrogallicum, Acid. Pyroligneosum Crudum, Acid. Salicylicum, Acid. Sulphocarbolicum, Acid. Sulphurosum, Acid. Trichloraceticum, Albargin,

Aluminii Acetatis Liquor, Alum. Aceto-Tartras, Alum. Chlo-  
ridi Liquor, A. Oleas, A. Nitras, A. Sulphas, Alumnol, Ammon.  
Benzoas, Amyloform, Antiseptin, Antinosin, Anytin, Anytol,  
Argentamine, Argentol, Argonin, Aristol, Asterol, Balsamum  
Peruvianum and Tolutanum, Benzoin, Benzonaphthol, Betol,  
Bismuthi Benzoas, B. Betanaphtholas, B. Cerii Salicylas, B.  
Cinchonidinæ Iodidum, B. Di-thio-salicylas, B. Iodo-resorcin  
Sulphonas, B. Oleas, B. Oxychloridum, B. Oxyiodogallas, B.  
Phenol, B. Phosphas, B. Quinolinæ Sulphocyanidum, B. Sal-  
icylas, B. Subgallas, B. Subiodas, B. Sulphis, B. Tribromphe-  
nolas, Borax, Boro-Glyceride, Calcii Paracresotinas, Calcii  
Iodas, Calcinol, Calx Chlorinata, Carbo Ligni, Carbonis Bisul-  
phidum, Camphor, Camphor Phenol, C. Resorcin, C. Salicylate,  
C. Thymol, Caryophyllum, Chinoline, Chinolinæ Tartras, Chino-  
sol, Chlori Liquor, Chloroform, Cinchoninæ Iodo-Sulphas, Cin-  
chonidinæ Sulpho-carbolas, Cinnamomum, Cinnamomi Ol.,  
Collargol, Copaiba, Creosotum, Cupri Oleas, C. Sulphocarbolas,  
Cyllin, Cystamine, Dextroform, Diaphtherin, Diaphthol, Di-  
iodoform, Eau de Javelle, Eka-Iodoform, Eucalyptol, Eucalyp-  
tus Oil, Eudoxin, Eugallol, Eupyrin, Europhen, Fluoroform,  
Formaldehyde, Fortoin, Glutol, Glycerinum, Glycosal, Guai-  
acol and its salts, Helenin, Hermophenyl, Hexamethylenetetra-  
mine, Hydrarygi Cyanidum, Ethylene-diamine Citras, H. et  
Potassii Iodidum, H. Nitratis Liquor Acidus, H. Nucleinas,  
H. Perchloridum, H. Salicylas, H. Subchloridum, Hydrargyrol  
Hydrogenii Peroxidi Liquor, Hydronaphthol, Ichthargan, Ich-  
thoform, Iodi Tribromidum, Iodi Trichloridum, Iodoformin,  
Iodoformogen, Iodoformum, Idol, Iodolene, Iodopyrin, Io-  
dum, Itrol, Izal, Lactonaphthol, Lenigallol, Loretin, Losophan,  
Lysoform, Lysol, Menthol, Methyl Salicylas, Microcidine, Naph-  
thalene, Naphthol, Naphthol-Camphor, Nosophen, Nuclein and  
its salts, Para-monochlorphenol, Potassa Sulphurata, Potassii  
Permanganas, Protargol, Pyoktanin, Quininæ Sulphas, Resor-  
cin, Sal Alembroth, Saligallol, Salitannol, Salol, Saloquinine,  
Sodæ Chlorinatæ Liquor, Sodii Anisas, S. Benzoas, S. Chlori-  
dum, Sodii Di-Thiosalicylas, S. Fluoridum, S. Salicylas, S.  
Silicofluoridum, S. Sulphis, S. Sulphocarbolas, Sozoiodol,  
Strontii Salicylas, Sulphaminol, Tachiol, Terebinthinae Oleum,  
Thalleinæ Sulphas, Thymol, Traumatol, Tribromphenol, Tri-  
bromoresorein, Trichlorphenol, Trikresol, Vioform, Zinci Chlo-  
ridum, Zinci Sulphis, Zinci Sulphocarbolas.

**Antispasmodics.**—Medicines which allay or prevent the recurrence of spasms: Acid. Hydrocyanic. Dil., Æther, Æther Aceticus, Æthyl Iodidum, Ammoniæ Liquor, A. Carbonas and Bicarbonas, Spiritus Ammoniæ Aromaticus, Ammoniacum, Amyl Nitris, Amyl Valerianas, Antim. Tartaratum, Argenti Nitras, Argenti Oxidum, Asafetida, Atropinæ Valerianas, Belladonna, Bromides, Cajuput. Ol., Calendula, Camphora, Camphora Monobromata, Cannabis Indica, Caryophyllum, Castoreum, Cerii Oxalas, Chloral Hydras, Chloroformum, Cimicifuga,

Couium, Ethyl Nitritis Liquor, Euphorbia Pilulifera, Galbanum, Grindelia, Hyoscyamus, Iso-butyl Nitrite, Juniperi Ol., Lobelia, Moschus, Menth. Pip. Ol., Physostigma, Physostigminæ Salicylas and Sulphas, Pil. Aloes et Asafetidæ, Opium, Quebracho, Rutæ Oleum, Sodii Nitris, Spir. Ammon. Fetid., Stramonium, Sumbul, Tabacum, Terebinthina, Trinitrini Liquor and Tabellæ, Valeriana and Valerianates, Zinci Oxidum, Zinci Sulphas, Zinci Valerianas.

**Aperients.**—See Cathartics.

**Aphrodisiacs.**—Medicines which increase sexual appetite: Alcohol, Belladonna, Calcii Hypophosphis, Camphor, Cantharis, Coffee, Damiana, Hæmatinics and Tonics, Tinct. Ferri Perchlor., Nux. Vomica (Strychnina), Phosphorus.

**Aromatics.**—See Carminatives.

**Astringents.**—Medicines which produce contraction of the tissues, diminution in the size of blood vessels and coagulation of the albuminous fluids; they are given to improve digestion and check secretions, mucous discharges, and hæmorrhages; or applied topically to stop bleeding and diminish discharges.

*Mineral Substances.*—All the Diluted Mineral Acids, Aluminium Salts, Argentamin, Argenti Nitrás, A. Oxidum, Bismuth Salts, Borax, Cadmii Sulphas, Calamina, Calcii Carbonas Præcip., Calcii Hydras, Carbolic Acid, Creosotum, Creta Præp., Cupri Sulphas, Ferri Perchlor. Liquor, F. Pernit. Liquor, F. Sulphas, Ferri et Quin. Cit., Plumbi Acetas, P. Carbonas, P. Oxidum, P. Subacetatis Liquor Fortis, Zinci Acetas, Z. Carbonas, Z. Chloridum, Z. Oxidum, Z. Sulphas, Z. Sulphocarbolas.

*Vegetable Substances.*—Acetum, Acid. Acetic. Dil., A. Galliæ., A. Tannic., Areca, Belæ Confectio, Catechu, Cinchona, Cinnamomum, Coto, Ergota, Erigerontis Oleum, Filix Mas, Galla, Glutanol, Granati Cort., Guarana, Gummi Eucalypt., Hæmatoxylum, Hamamelis, Honthiñ, Hydrastis, Ispaghula, Krameria, Kino, Larix, Matico, Nucis Juglandis Spiritus, Quercus, Opium, Rheum, Rosæ Gallicæ Petala, Symphytum, Tannalbin, Tannigen, Tannoform, Tanocol, Tannone, Terebinthinæ Ol., Ulmus, Uva Ursi, Vinca Major.

**Carminatives.**—Medicines which stimulate or aid the removal of flatus from the stomach and intestines, and relieve griping: Æther, Æther Aceticus, Anethi Ol., Anisi Ol., Asafetida, Boldo, Camphor, Carbo Ligni, Cardamomum, Carui Ol., Caryoph., Cascarella, Chloroformum, Cinnamomum, Coriander, Coto, Feniculum, Ipecacuanha, Juniper, Lavand. Ol., Limon. Ol., Menth. Pip. Ol., Menth. Virid Ol., Menthol, Menthol Valerianate, Myristica, Myrrha, Pimento, Piper, Rosmarini Oleum, Sumbul, Valeriaua, Zingiber.

**Cathartics.**—Medicines which promote intestinal evacuations.

*Aperient or Laxative.*—Apocodeinæ Hydrochloridum, Amygdalæ Oleum, Asaftida, Baptisin, Belladonna, Cascara Sagrada, Cassiae Pulpa, Euonymin, Fel Bovinum, Ficus, Glycyrrh. Pulv. Comp., Ipecac., Lactuca, Magnesia, M. Carbonas, M. Citratis Liquor, Manna, Mel Depuratum, Menyanthes, Mori Succus, Nux Vomica, Olive Oleum, Phenolphthaleïn, Potassii Sulphas, P. Tartras, Prunum, Rhainnus, Ricini Oleum, Sapo Durus, Sodii Citro-Tartras Effervescent, Sodii Phosphas, Sodii Sulphas, Sodii Sulphovinas, Soda Tartarata, Sulphur, Sulphur Praecip., Tamarindus, Taraxacum.

*Purgative.*—Acid. Cathartic., Aloes Barb., A. Socot., Aloin, Baptisin, Colchicum, Convallarin, Helleborus Niger, Hydrarg. Subchloridum, Iris, Iridin, Juglans, Kamala, Leptandrin, Magnes. Sulphas, Mangan. Sulphas, Phyto-lacca, Podophyllum, Rheum, Senna, Sodii Chloridum, Sodii Sulphas.

*Drastic or Hydragogue.*—Apocynum, Bryonia, Cambogia, Cocolynthis, Crotonis Oleum, Elaterium, Elaterinum, Helleborus Niger, Hydrarg. c. Creta, Hydrarg. Subchloridum, Jalapa, Kaladana, Lobelia, Magnes. Sulphas, Potass. Tart. Acida, Scammonium, Scoparium, Sodii Sulphas, Veratrina.

*Mineral Waters.*—Achselmannstein, Birmenstorf, Carlsbad, Friedrichshall, Homburg, Hunyadi Janos, Kissingen, Marienbad, Pullna, Royal Hungarian Bitter Water (Buda-Pesth), Seidlitz.

**Caustics.**—Substances which destroy the vitality of the parts to which they are applied: Acid. Acetic. Glacieale, A. Arseniosum, A. Carbolicum, A. Chromicum, A. Hydrochloricum, A. Nitricum, A. Pyrogallic., A. Sulphurici Pasta, A. Trichloracetic, Alum. Exsiccatum, Antim. Chloridi Liquor, Argenti Nitratas, Calx, Creosotum, Cupri Acetas, C. Subacetum, C. Nitratas, C. Sulphas, Ferri Pernitratum Liquor, Formaldehyde, Hydr. Iod. Rubr., Hydr. Ox. Rubr., Hydr. Ox., Flav., Hydr. Perchloridum, Hydr. Nitrat. Acidus Liquor, Potassa Caustica, Potassa c. Calce, Potassii Permang., Sodii Ethylatis Liquor, Zinci Chloridum, Zinci Nitratas.

**Cholagogues.**—The direct increase the amount of bile secreted: Acid. Hydrochlor., Acid. Nitric., Acid. Nitro-hydrochlor. Dil., Aloes, Ammonii Chloridum, Ammonii Phosphas, Antim. Sulphuratum, Colchicum, Colocynth, Euonymus, Hydrarg. Perchloridum, Hydrastis, Ipecacuanha, Iridin, Jalapa, Phytolaccin, Podophyllum, Rheum, Sodii Benzoas, Salicylas, and Sulphas. The indirect act by stimulating the duodenum: Mercury, especially the Subchloride; most Cathartics.

*Mineral Waters.*—Ems, Friedrichshall, Hungarian, Hunyadi Janos, Kissingen.

**Counter-Irritants.**—Substauces which stimulate and cause irritation or inflammation of the parts to which they arc applied; they differ in their intensity of action, and may be divided as follows:—

**RUBEFACIENTS.**—Agents which, when applied to the skin, produce local warmth and redness: Acid. Aceticum, Æther, Alcohol, Ammoniaæ Liquor, Ammoniacum, Armoracia, Cantharis, Emp. Calefaciens, Emp. Picis, Lin. Camphoræ Ammon., Iodum, Lin. Capsici, Lin. Chloroformi, Lin. Sinapis, Liq. Iodi Fortis, Mentholi Emp., Mezereum, Ol. Cadinum, Ol. Cajuputi, Ol. Limonis, Ol. Rosmarini, Ol. Rutæ, Ol. Succini, Ol. Terebinth., Thymol, Ung. Eleuni.

**VESICANTS OR EPISPASTICS.**—Those which raise a vesicle or blister: Acidum Aceticum Glacieale, Ammoniaæ Liquor Fortior, Cantharidin, Cantharis Emp., Epispasticus Liquor, Mezerei Ung., Rutæ Oleum, Sinapis Lin., Sinapis Olcum.

**PUSTULANTS.**—Those which produce pustules: Antimonium Tartaratum, Argenti Nitrás, Crotonis Oleum.

**Demulcents.**—Substances which protect, and thus allay irritation of the mucous membranes: Acaciæ Gum., Althæa, Amygdala Dulc. and Oleum, Amylum, Cetraria, Carrageen, Cydonium, Ficus, Gelatinum, Glycerinum Boracis, Glycyrrhiza, Hordeum, Ichthyocolla, Ispaghula, Linum, Maranta, Mel Depuratum, Olivæ Oleum, Ovi Albumen, Prunum, Sacch. Purificatum, Salep, Sevum, Theriaca, Tragacantha, Triticum Repens, Ulmus, Uvæ.

**Deodorants.**—Substances which destroy offensive odours and absorb foul gases: Chlorine and its oxides, Acid Chromie., Acid. Sulphuros., Acid. Nitric, Bromum, Carbo Ligni, Calx, Calcii Permanganas, Chinosol, Di-iodoform, Eigons (A) and (B), Eka-iodoform, Eucalypti Ol., Europhen, Ferri Sulph., Formaldehyde, Hydrogenii Peroxidum, Iodoformin, Iodoformogen, Iodoformum, Idol, Iodolene, Iodum, Loretin, Paraformaldehyde, Menthoxol, Naphthalene, Nosophen, Plumbi Nitrás, Potass. Permang., Resorcinol, Thymol, Trichlorphenol, Vioform, Zinci Chloridum.

**Desiccants.**—Agents which check secretiou, and allay discharges from ulcers and wounds: Acidi Borici Pulvis, Bismuthi Subnit., Calamina, Calcii Carbonas Præcip., Calcii Hydras, Creta Præparata, Magnesii Carbonas, Plumbi Acetas, Plumbi Carbonas, Talc, Zinci Carbonas and Oxidum.

**Diaphoretics.**—Medicines which increase the action of the skin and produce sweating. Employed in fresh colds, in fevers, dropsy and some skin diseases: Acidum Salicylicum, Aconitum, and Ammonii Citras; Æther, Alcohol, Ammonii Acetatis Liquor, Ammon. Carbonas, Ammou. Chlorid., Ammon. Citratis

Liquor, Ammon. Phosphas, Antimonialis Pulvis, Antim. Vinum, Antim. Sulphurat., Arecolinae Hydrobrom., Armoracia, Buchu, Cajuputi Sp. and Oleum, Calendula, Camphor, Chinosol, Chloroform, Colchici Vin., Doveri Pulv., Dulcamara, Eupatorium, Grindelia, Guaiaci Ammon. Tinct., Ipecac. Pulv., Ipecac. Vin., Jaborandi, Lactuca, Lobelia, Mezereum, Morphina, Opium, Pilocarpina, Pilocarpine Hydrochloride, Nitrate and Salicylate, Potassii Acetas, Potassii Citras, Potass. Nitratas, Salicin, Sassafras, Senega, Simaruba, Serpentaria, Sodii Salicylas, Sp. Ætheris Nit., Sulphur, Sulphur Praecip., Spiritus Camphoræ, Spiritus Rectificatus, Terebinthinæ Oleum.

**Disinfectants.**—Substances which destroy the specific microbes or toxins of communicable diseases: Acid. Carbol., Acid. Chromic., Acid. Cresylic., Acid. Nitrosum, Acid. Pyrogallic., Acid. Sulphurosum, Aluminii Chloridi Liquor, Benzonaphthol, Bromum, Calx Chlorinata, Calcis Chlorinata Liquor, Calcii Permanganas, Carbol-Lysoform, Chinosol, Cyllin, Chloralum, Chlorine, Creosotum, Formaldehyde, Galloformin, Hydrarg. Perchlor., Iodoformum, Iodol, Iodum, Iodi Tribromidum and Trichloridum, Lysoform, Naphthol, Paraformic Aldehyde, Potassii Permang., Condy's Fluid, Potassii Bichrom., Ferri Sulphas, Hydrogenii Peroxidum, Pini Oleum, Salacetol, Salol, Sodæ Chlorinatæ Liquor, Sublamin, Thymol, Zinci Chloridum.

**Diuretics.**—Medicines which promote the secretion of urine: Acid Benzoic, Acid Phosph. Dil., Alcohol, Aconitum, Æthoxycaffeinum, Agurin, Ammon. Acet. Liq., Ammon. Benzoas, Acid Camphoric, A. Chic., Ammon. Boras, Ammon. Chlorid., Apocynum, Armoracia, Belladonna, Borax, Buchu, Caffeina, Caffeinæ Sodio-Benzoas, Chinotropine, Caff. Sodio-Salicylas, Cambogia, Cantharis, Caulophyllin, Colchicum, Convallaria, Copaiba, Copaibæ Resin, Cystamine, Cubeba, Damiana, Digitalis, Diuretin, Dulcamara, Erigerontis Ol., Euonymin, Hexamethylenetetramine, Helmitol, Hemidesmi Radix, Hydrarg. Subchloridum, Hyoscyamus, Iridin, Juniperi Oleum, Kava-Kava, Lactuca, Lithii Liquor Carbonatis, Lithii Carbonas, Lithii Citras, Lithium Theobromine Salicylate, Lobelia, Lysidine, Lysidine Acid Tartrate, Magnesia, Mag. Carbonas, Paraldehyde, Nitrites, Pix Liquida, Pareira, Physalis, Potassii Acetas, Oxysparteine, Oxy-sparteine Hydrochloride and Sulphate, Potass. Iodide, Potassii Nitratas, Potassii Tartras Acida, Potassii Tartras, Potassii Bicarb., Potassii Carb., Potassii Citras, Sacchar. Lactis, Salicylates, Senega, Scoparium, Scilla, Simaruba, Soda Tartarata, Sodii Benzoas, Sodii Bicarb., Sodii Phosphas, Sparteinæ Sulphas, Spirit. Ætheris Nit., Spir. Rectificatus, Strontii Lactas, Terebinthinæ Ol., Theobromine, Theocin, Ulexine, Ulmi Decoctum, Urea, Uresin, Uvae Ursi.

**Mineral Waters.**—Friedrichshall, Kissingen, Leuk.

**Ecbolics.**—Substances which promote the contraction of the

gravid uterus and facilitate the expulsion of the contents : Borax, Cimicifuga, Drastic Purgatives, Ergota, Cornutinæ Citras, Hydrastinæ Hydrochloridum, Quinina, Ruta, Sabina.

**Emetics.**—Medicines which excite vomiting : Alum (in repeated doses), Ammonii Carbonas, Anthemis, Antim. Sulphuratum, Antimonium Tartaratum, Apomorphinæ Hydrochloridum, Baptisin, Calotropis, Cephæline, Cephæline Hydrochloride, Cupri Sulphas, Emetine, Emetine Hydrobromide and Hydrochloride, Ipecacuanha, Lukewarm or Tepid Water, Phytolacca, Sinapis Pulvis, Sodii Chloridum, Tabacum, Veratrina, Veratrum Viride, Zinci Acetas, Zinci Sulphas.

**Emmenagogues.**—Medicines which maintain or restore a healthy condition of the menstrual discharge : Aloes, Aloes Decoctum Co., Aloes et Myrrhæ Pil., Alcohol, Apiol, Borax, Calendula, Cantharis, Cimicifuga, Ergota, Ferrum Redactum, Hæmatinics, Helleborus Niger, Hydrastininae Hydrochloridum, Iron Salts, Manganese Oxid. Præp., Myrrha, Potass. Permang., Purgatives, Quinina, Ruta, Sabina, Nervine Tonics.

**Emollients.**—Substances which soften and relax the tissues, also such as protect sensitive surfaces ; employed to allay irritation ; Adeps, Adeps Lanæ, Amygdalæ Oleum, Glycerinum Boracis, Cera Alba, Cera Flava, Cetaceum, Collodium, Cydonium, Glycerinum Dilutum, Glycer. Amyli, Linum Con-tusum, Olivæ Oleum, Paraffinum Molle, Sevum, Ulmus.

**Epispastics.**—See Counter-Irritants.

**Errhines.**—See Sternutatories.

**Escharotics.**—See Caustics.

**Expectorants.**—Medicines which promote the secretion of bronchial mucus or facilitate its expulsion : Acid. Benzoicum, Acidum Carbolicum, Æther, Alkalies, Ammonia, Ammonii Benz., Ammonii Carb., Ammonii Chloridum, Ammoniacum, Anisi Oleum, Antimonium Tartaratum, Apomorphinæ Hydro-chlor., Asafetida, Bals. Peruv., Bals. Tolut., Benzoin, Camphora, Cimicifuga, Copaiba, Creosotum, Cubeba, Emetine Hydrobromide and Hydrochloride, Eucalyptus, Galbanum, Guaiacol and its Salts, Iodides, Ipecacuanha, Laricis Cortex, Lobelia, Myrrha, Physostigma, Pini Oleum, Pix Liquida, Quillaia, Scilla, Senega, Styrax Præp., Sulphur, Terpene Hy-drate, Terebene, Terebinth. Oleum, Vapores Acidi Carbolici, Chlori, Creosoti, and Iodi.

**Febrifuges.**—See Antipyretics.

**Hæmatinics.**—See Tonics, Blood.

**Hæmostatics.**—See Styptics.

**Hypnotics.**—(Soporifics)—Medicines which induce sleep, and thus remove the consciousness of pain by lessening the excitability and functional activity of the brain cells : Acetophenone,

Acid. Hydrobrom. Dil., Ammon. Bromidum, Amylene Hydrate, Antispasmin, Boldo, Camphor, Camphora Monobromata, Cannabinæ Tannas, Cannabinon, Cannabis Ind., Chloral Hydras, Chloralamide, Chloralose, Chloretone, Chlorobrom, Codeina, Conium, Dormiol, Dionine, Hedonal, Heroin, Heroin Hydrochloride, Hyoscyamus, Hyoscina, Hyoscine Hydrobromide, Hydrochloride and Hydriodide, Hypnal, Hypnone, Lactophenin, Lithii Bromidum, Lupulus, Metaldehyde, Methylal, Morphina, Morphinæ Bimeconatis Liquor, Narceina, Opium, Papaver, Papaverina, Paraldehyde, Peronine, Piscidia, Potassii Bromidum, Scopolaminæ Hydrobrom., Sodii Bromidum, Somnal, Stramonium, Sulphonal, Urethane, Tetronal, Trional, Veronal.

**Laxatives.**—See Cathartics.

**Mydriatics.**—Drugs which produce dilatation of the pupil : Arecoline Hydrobromide, Atropina, Atrop. Methylbrom., Atropine Salicylate, Atroscine, Belladonna, Cocaina, Cocainæ Hydrochloridum, Daturina, Duboisinæ Sulphas, Ephedrine Hydrochloride, Euphthalmine Hydrochloride and Salicylate, Homatropina, Homatropinæ Hydrobromidum, Hydrochloridum and Salicylas, Hyoscyamus, Hyoscinae Hydrobromidum and Hydrochloridum, Mydrin, Mydriasin, Hyoscyaminæ Hydrobromas and Sulphas, Scopola, Stramonium.

**Myotics.**—Drugs which contract the pupil : Eserine, Jaborandi, Morphina, Opium, Physostigmina, Physostigminæ Salicylas and Sulphas, Pilocarpina.

**Narcotics.**—See Hypnotics.

**Nutritives.**—Substances which aid assimilation and improve the condition of the tissues : Acaciæ Gum., Amygdala Dulc., Bynes Extractum, Calcii Glycerophosphas, Carnis Extract., Carrageen, Cetraria Decocatum, Ficus, Hordeum, Manna, Maranta, Mel Depuratum, Morrhuæ Ol., Olivæ Oleum, Prunum, Sacch. Lactis, Sacch. Purificatum, Salep, Sevum, Sp. Vini Galici Mist.

**Parasiticides.**—Medicines which destroy vegetable and animal parasites : Acid. Carbolic., Acid. Pyrogallic., Acid. Salicylic., Acid. Sulphurosum, Anthrarobin, Chrysarobinum, Cupri Oleas, Hydr. Oleas, Hydr. Perchloridum, Iodi Pigmentum, Mercurial preparations, Olea Expressa et Essent., Naphthalene, Picrotoxin, Potassa Sulphurata, Pyrethrum Roseum, Quassia, Soziodol, Staphisagria, Styracis Unguentum, Sulphur, Tabacum, Thymol.

**Purgatives.**—See Cathartics.

**Pustulants.**—See Counter-Irritants.

**Refrigerants.**—Medicines which diminish the body-heat and relieve febrile thirst : Acetum, Aqua, Acidum Aceticum, A. Citricum, A. Hydrochlor. Dil., A. Nitric Dil., A. Phosph. Dil., A. Sulph. Dil., A. Tartaricum, Ammon. Acet. Liquor, Aurantii Succus, Limonis Succus, Magnesii Citratis Liquor, Mori Syrup., Oxymel, Potass. Citras, Potass. Chloras, Potass. Nitratas,

Potass. Tart. Acida, Prunum, Sp. Æther. Nitr., Sp. Æther. Muriaticus, Tamarindus ; Diaphoretics and Antipyretics.

**Rubefacients.**—See Counter-Irritants.

**Sedatives.**—Medicines which exert a soothing influence, by diminishing pain, depressing vital activity, or tranquillising abnormal muscular movement;

*Local.*—Acid. Carbol., Acid. Hydrocyan. Dil., Atropina, Belladonna, Borax, Chloral, Creosotum, Morphina, Opium, Plumbi Acetas, P. Carbonas, P. Subacetatis Liquor Dilutus.—See also Anæsthetics, Local, and Auodynes.

*Respiratory.*—Acid. Hydrocyanic. Dil., Æther, Æther Aceticus, Æthyl Iodidum, Ammon. Bromid., Amyl Nitrite, Belladonna, Cannabis Indica, Chloroformum, Chloral, Codeina, Codeine Hydrochloride, Phosphate and Salicylate, Conium, Conina, Coninæ Hydrobrom., Coninæ Hydrochloridum, Dionine, Gelsemium, Heroine, Heroine Hydrochloride, Hyoscyamus, Laurocerasi Aqua, Lobelia, Morphina and salts, Opium, Peronine, Pruni Virgin. Syrup. et Tinct., Stramourium, Terebinthinæ Oleum.

*Nervine.*—Acid. Hydrobrom. Dilutum, Ammonii Bromidum, Ammon. Valerianas, Amyl Valerianas, Bromethyl-formine, Antim. Tartaratum, Antispasmin, B-Eigon, Camphora, Camphora Monobromata, Chloralose, Gallobromol, Gelsemium, Hyoscina, H. Hydrobromidum, Hydrochloridum and Hydriodidum, Hyoscyaminæ Hydrobromidum and Sulphas, Lactuca, Lithii Bromidum, Lupulin, Lupulus, Laurocerasi Aqua, Magnesii Bromidi Liquor, Menthol Valerianate, Niccoli Bromidum, Phenacetin, Phenazonum, Pareira, Physostigma, Potassii Bromidum, Scutellaria, Sodii Bromidum, Trional, Valyl, Veratrum Viride, Viburnum, Zinci Bromidum.

*Gastric.*—Acid. Arseniosum, Acid. Carbolic., Acid. Carbonic., Acid. Hydrocyan. Dil., Acid. Phosph. Dil., Ammonii Bromidum, Argenti Niras, Argenti Oxidum, Belladonna, Bismuth salts, Calcii Hydras, Calcis Liquor, Cerii Oxalas, Chloral, Chlorobrom, Chloroform, Cocainæ Hydrochlor., Cocainæ Phenylas, Creosotum, Hydrarg. c. Creta, Hyd. Subchl. (small doses), Hyoscyamus, Ice, Ipecacuanha (small doses), Opium, Papaver, Phloridzin, Potass. Bicarb., Potass. Bichrom., Potass. Bromid., Sodii Bicarb., Sodii Bromidum, Zinci Oxidum.

*Cardiac.*—Acidum Hydrocyanicum Dilutum, Aconitum, Amyl Nitris, Autim. Tart., Apocynum, Aqua Laurocerasi, Belladonna, Conium, Chloral, Digitalis, Ergota, Hyoscyamus, Ipecacuanha, Nitroglycerinum, Opium, Scilla, Sodii Nitris, Spirit. Æther. Nit., Stramonium, Veratrum Viride.

**Sialagogues.**—Medicines that increase the secretion of the saliva : Acetum, Acid. Acetic., Acid. Citric., Acid. Tartaric.,

Æther, Alcohol, Arecoline Hydrobromide, Armoracia, Aurantium, Dilute Acids, and Acid salts, most Emetics (especially Antiunony and Ipecacuanha), Hydrargyrum and its salts, Iodides, Ipecacuanha, Jaborandi, Limonis Succus, Mezereum, Physostigma, Pilocarpina, Pilocarpinæ Hydrochloridum, Nitratas and Salicylas, Piper, Pyrethrum, Rheum, Sinapis, Tabacum, Tamarindus, Zingiber.

**Soporifics.**—See Hypnotics.

**Sternutatories.**—Medicines which increase the nasal mucous secretion, which is sometimes accompanied by sneezing: Ipecacuanha (powdered), Tabacum (snuff), Veratrum Viride (powdered).

**Stimulants.**—Medicines which increase the function of a part, or of an organ.

*Nervine.*—Acid. Arseniosum, Æther, Arnica, Ammon. Carb., Ammon. Chlorid, Ammon. Phosph, Asafetida, Belladonna, Calcii Hypophosphis, Cannabis Ind., Cantharis, Castoreum, Coca, Coffee, Ergota, Guarana, Hydrastis, Musk, Nux Vomica, Oleum Cajuputi, Phosphorus, Strychnina, Valerian.

*Stomachic.*—See Carminatives and Stomachic Tonics.

*Circulatory.*—Æther, Æther Aceticus, Æther. Spiritus Nitrosi, Alcohol, Ammoniæ Liquor, Arnica, Camphor, Convallaria, Cubeba, Digitalis, Sumbul, Valeriana.

*Local.*—Potass. Chloras. See also Counter-Irritants.

**Stomachics.**—Medicines which directly promote the functions of the stomach and improve the appetite and digestion. See Carminatives and Tonics, Stomachic.

**Styptics.**—Remedies which arrest bleeding: Acetum, Acid. Sulphuric. Dil., Acid. Tanuic., Adreualin, Albumeu, Argenti Nitratas, Beuzoin, Bryonia, Catechu, Chinosol, Cinchouæ Pulvis, Collodium, Cornutine Citrate, Cornutine Hydrochloride, Cotarninc Phthalate (Styptol), Creosote, Cupri Sulphas, Cupri Sulphocarbolas, Ergota, Ergotiuinc, Erigerontis Oleum, Ferri Perchlor. Liquor and other Ferric salts, Ferri et Ammonii Sulphas, Ferripyrrin, Gallæ, Granati Cort., Gummi Rubri Extractum Liquidum, Hæmatoxylum, Hamamelis, Hydrastis, Hydrastinæ Hydrochloridum, Kino, Krameria, Matico, Opium, Quercus, Plumbi Acetas, Plumbi Sub-acetatis Liquor, Salipyrin, Spiritus Rectificatus, Suprareual Gland and Extract, Terebinthinaæ Oleum, Zinci Acetas, Zinci Sulph.

**Sudorifics.**—See Diaphoretics. When diaphoretics act very powerfully, they are called sudorifics.

**Tonics.**—Therapeutic agents which impart strength or tone to the functions of the body or its parts.

*Acting through the blood, and improving its qualities.*—  
Acid. Arseniosum, Acid. Phosph. Dil., Acidum Nuclini-

cum and salts, Alboferrin, Ferri Acetatis Liquor, Ferratin, Fersan, Ferri Albuminas, Ferri Alginas, Ferri Peptonas, Ferri et Man. Peptonasis Liq., Ferri Arsenas, F. Bromidum, Ferri Cacodylas, F. Carb. Saccharatus, F. Ammonii Citras, F. et Quininæ Citras, F. Chloroxydum, F. Iodidum, F. Liquor Dialysat., F. Lactas, F. Oxid. Magnet., F. Perchlor., F. Pernit. Liquor, F. Phosphas, F. Phosph. Co. Syrup. (Squire), Ferri Pilula, F. Redactum, F. Sulphas, F. Tartaratum, Easton's Syrup, Hæmoglobin and preparations, Morrhuæ Oleum, Potass. Permang., Sodii Cacodylas, Di-sodii Methylarsenas.

*Nervine.*—Acid. Arseniosum, Argenti Nitratas, Argenti Oxidum, Calcii Hypophosphis, Cinchona, Coca, Cupri Sulphas, Damiana, Ferrum salts, Morrhuæ Oleum, Nux Vomica, Phosphorus, Quinina, Sodii Hypophosphis, Strychnina, Sumbul, Zinci Acetas, Zinci Oxidum, Zinci Sulph., Zinci Valerianas.

*Stomachic and Intestinal.*—Absinthium, Acid. Hydrochlor. Dil., A. Nitric. Dil., A. Nitro-hydrochlor. Dil., A. Phosph. Dil., A. Sulph. Dil., Aloes, Anthemis, Armoracia, Aurant. Cort., Bebeerina, Bebeerinæ Hydrochlor. and Sulphas, Buchu, Calumba, Canellæ Cortex, Capsicum, Cascara, Chiretta, Cimicifuga, Cinchona, Cinchonidinae Salicylas, Cinchonidina, Cinchonina, Cusparia, Decoct. Aloes Comp., Erigerontis Oleum, Eupatorium, Gentiana, Guarana, Hydrastis, Krameria, Kava-Kava, Limonis Cortex, Lupulinum, Lupulus, Matico, Mezereon, Menyanthes, Orexin, Orexin Hydrochloride, Orexin Tannate, Nectandra, Nux Vomica, Pancreatic Enzymes, Pepsin, Peptonised Foods, Pareira, Piper, Quassia, Quebracho, Quininæ Hydrochloridum, Quininæ Sulph., Rheum, Salicin, Sarsaparilla, Serpentaria, Simaruba, Sinapis, Sodii Chloridum, Strychnina, Taraxacum, Ulmus, Uva Ursi.

*Cardiac.*—Acidum Arseniosum, Adonis, Adrenalin, Adrenalin Chloride, Apocynum, Caffeina, Caffeinæ Sodio-Benzozas, Caff. Sodio-Salicylas, Convallaria, Convallamarin, Digitalis, Digitalein, Digitalin, Digitin, Digitonin, Digital toxin, Diuretin, Erythrophleum, Erythrophleine, and Hydrochloride, Ferrum salts, Nux Vomica, Oxysparteine, Oxysparteine Hydrochloride and Sulphate, Scilla, Sparteinæ Sulphas, Strophanthus, Strychnina, Suprarenal Gland, Veratrum Viride.

*Mineral Waters.*—Adelheidsquelle, Alet, Altwasser, Auteuil, Berka, Bocklet, Gastein, Kreuznach, Meïnbergh, Orezza, Ottienquelle, Pyrmont, St. Moritz, Spa, Schwalbach, Wildungen.

*Vaso-Dilators.*—Erythrol Tetranitrate, Mannitol Hexanitrate, Sodii Nitris.

*Vermicides and Vermifuges.*—See Anthelmintics.

*Vesicants.*—See Counter-Irritants.

## SECTION B.

## REMEDIES EMPLOYED IN SPECIAL AILMENTS.

*Abortion, Threatened* : Asafetida, Ergot in small doses, Hydrastis, Morphina, Opium, Plumbi c. Opio Pil., Potassii Chloras, Viburnum Prunifolium.

*Abcess (to abort.) Internally* : Aconite, Belladonna, Sulphides. *Locally* : Chlori Liquor, Glycerinum Belladonnæ, Iodoformum, Iodum, Acid Boric., A. Carbolicum, Pot. Permang., Argenti Nitratas.

*Aene. Internally* : Liquor Arsenicalis, Vinum Ferri, Ferri et Quin. Cit., Saline Purgatives, Confect. Sulphur. *Locally* : Ung. Sulphuris Hypochlor., Ung. Sulphuris Iodidi, Hydrarg. Perchlor. (lotion), Ichthyol, Potassa Sulphurata, Lotio Zinci Oxidi, Belladonna, Resorcin.

*Ague*.—See *Fever, Intermittent*.

*Albuminuria*. Acid. Gallicum, Amyl Nitris, Digitalis, Ferri Perchlor. Tinet., Jaborandi, Milk, Nitroglycerin, Sodii Nitris, Strontii Lactas.

*Aleoholism*. Ammoniæ Acetat. Liquor, Ammon. Bromid., Ammon. Carb., Armoracia, Arsenic, Calumba, Capsicum, Cimicifuga, Cinchona, Cocainæ Hydrochlor., Gentiana, Hyoscinæ Hydrobrom., Lupulus, Nux Vomica, Opium, Quinina, Strychnina.—See also *Delirium Tremens*.

*Alopeeia*. Acetum Cantharidis, Chrysarobini Ung., Hydrarg. Perchlor. (Lotio), Liniment, Ammon., Lin. Camph. Ammon., Lin. Chloroformi, Linimentum Crinale, Lin. Crotonis, Lin. Sinapis, Lotio Crinalis, Lotio Stimulans, Pilocarpinæ Nitratas.

**Alteratives**.—Section A.

*Amenorrhœa*. Aloes, Apiol Capsules, Auri et Sodii Chloridum, Cantharis, Cimicifuga, Ergota, Ferri Bromidi Syrupus, Ferri Carb. Sacch., Ferri Lactas, Ferri Phosphas, Ferrum Redactum, Guaiaci Resina, Mistura Ferri Co., Menyanthes, Myrrha, Pil. Aloes et Myrrhæ, Potass. Permang., Rutæ Oleum, Santoninum, Saline Purgatives, Hæmatinics, Nervine Tonics.

*Anæmia*.—See *Tonics, Blood*, Section A.

*Anæmia*.—*Pernicious*. Acid. Arseniosum, Acid Nucleinic acid and salts, Bone Marrow, Hæmoglobin and Preparations, Phosphorus.

**Anæsthetics**.—Section A.

**Analgesics or Anodynes**.—Section A.

*Anasarca*.—See *Dropsy*.

*Aneurism*. Potassii Iodidum, Amyl Nitris, Aconitum, Morphina, Veratrum Viride, Gelatin injected subcutaneously.

**Angina Pectoris.** Æther, Amyl Nitris, Argenti Nitrás, Acid. Arseniosum, Acid. Hydrocyanic. Dil., Belladonna, Erythrol Tetranitrate, Iso-butyl Nitris, Morphina (hypoderm.), Nitro-glycerin; Potass. Iodidum, Pyridin, Sodii Nitrís.

**Anhydrotics.**—Section A.

**Antacids.**—Section A.

**Antalkalines.**—Section A.

**Antemetics.**—Section A.

**Anthelmintics.**—Section A.

*Anthrax.* Acid. Carbolic. (injection), Chloride of Zinc Points, Ipecacuanha (internally and locally).

**Antidotes.**—Section A.

**Antilithics.**—Section A.

**Antiperiodics.**—Section A.

**Antipyretics.**—Section A.

**Antiseptics.**—Section A.

**Antispasmodics.**—Section A.

**Aperients.**—Section A.

**Aphrodisiacs.**—Section A.

*Aphthæ.* Acidum Boricum, Acidum Sulphurosum, Alum (pulv.), Argenti Nitrás, Glycerinum or Mel Boracis, Myrrha, Potass. Chloras.

*Apoplexy.* Aloes, Croton. Ol., Elaterium, Terebinth. Enema, Hydrarg. Subchlor.; Pulvis Jalapæ Co., Stimulants contraindicated.

**Aromatics.**—Section A.

**Ascarides.**—See *Anthelmintics*.

**Ascites.**—See *Dropsy*.

**Asthma.** Acidum Arseniosum, Acid. Hydrocyanicum Dilutum, Æther, Æthyl Iodidum, Ammon. Fetid. Spirit., Ammoniacum, Ammonii Bromidum, Amyl Nitris, Analgen, Apomorph. Hydrochloridum, Bals. Tolutanum, Belladonna, Camphor, Cannabis Indic., Chloral, Chloroformum, Charta Nitrata, Cocainæ Salicylas, Balsam. Peruvianum, Ethyl Nitris, Eucalypti Oleum, Euphorbia Pilulifera, Grindelia Robusta, Hyoscyamus, Lobelia, Myrrha, Nitro-glycerin, Pilocarpinæ Nitrás, Piscidia, Potass. Bromid., Pot. Iod., Pyridin, Quebracho, Sodii Nitrís, Stramonium, Pulv. Stramonii Comp., Tabaci Folia.

**Astringents.**—Section A.

**Bed Sores.** Acidum Boricum, Acid. Sulphuro., Alum. Sulph., Argenti Nitrás, Amadou, Balsami Peruviani Ung., Brandy, Collodium, Plumbi Tannatis Glycerinum, Zinci Oxid. Ung.

**Bile, deficiency of.** Fel Bovinum, Hydrargyrum, Sodii Phosphas, Sodii Sulphas.—See *Cholagogues*. Section A.

*Biliary Calculi.*—See *Gall-stones*.

*Bites of fleas, to prevent.* Lavand. Ol., Pyrethrum Roseum, Camphora.

*Bites and Stings of Insects* (ants, bees, gnats, mosquitoes, wasps).

Lotio Acid. Carbolici, Liquores Ammoniæ, Potassæ, Soda, Plumbi Subacetatis; Chloroform, Ipecacuanha, Oleum Carbolicum, Oleum Olivæ, Oleum Pulegii, Sodii Bicarb.; *all locally*.

*Bites of Rabid Animals.* Cautery.

*Bites of Snakes.* Acid Chromic., Liquor Ammoniæ, Ammon. Comp. Tinctura, Potass. Permang.; Cautery, Strych. inject. hypoderm.

*Bladder, irritable.* Acidum Boricum, Belladonna, Buchu, Cannabis Ind., Chloral Hydras, Hyoscyamus, Opium. *Mineral Waters:* Fachingen, Malvern, Pougues, Langenbrücken, Luhatschowitz. See also *Cystitis*.

*Blenorragia.*—See *Gonorrhœa*.

*Blister, to heal.* Unguent. Cetacei.

— *to keep open.* Ung. Mezerei, Ung. Sabinæ.

*Blood restorers.*—See *Tonics*, Section A.

*Boils. Internally:* Acid. Arsenios., Alkalis, Calx Sulphurata.

*Locally:* Acid. Carbolic., Glycerinum Belladonnæ, Camphor Spir., Collodium, Galban. Comp. Ung., Menthol, Opium.

*Bones, Fracture of.* *Locally:* Symphytum. *Internally:* Calcii Phosphas.

*Bowels, Torpidity of.*—See *Cathartics*.

*Brain, Inflammation of.*—See *Meningitis*.

*Breast, Inflammation of.* Glycerinum Belladonnæ, *locally:* Phy-tolacca, *internally and locally*.

*Breath, Fétor of.* Acid. Carbolic., Glycer. Acid. Carbolic., Camphor, Carbo Ligni, Creosote, Heroin, Heroin Hydrochloride, Iodipin, Oxygen, Pepsin, Potass. Chloras, Potass. Permang., Pyramidon, Sodii Salicylas.

*Bright's Disease, Acute Inflammatory:* Aconite, Ammon. Acetat. Liquor, Belladonna, Digitalis, Diuretin, Elaterium, Tinct. Ferri Acet., Pulv. Jalapæ, Juniper. Ol., Pilocarpin., Pot. Acetas, Pot. Tart. Acid., Scilla, Scoparium, Spir. Ætheris Nitrosi, Strontii Lactas.

— *Cirrhotie.* Nitroglycerin. Saline Aperients. See also *Albuminuria, Dropsy (renal)* and *Uræmia*.

*Bronchitis, Acute.* Acid. Benzoic., Aconitum, Æther, Ammoniacum, Ammoniæ Liquor, Ammonii Carbon., Ammon. Chloridum, Antim. Tart., Apomorphinæ Hydrochloridum, Asafetida, Belladonna, Tinct. Camph. Co., Chloral, Sp. Chlorof., Cimicifuga, Copaiba, Dionine, Ferri et Am. Citras, Tinct. Ferri Acet. Æther., Galbanum, Heroin, Heroin Hydrochloride, Iodipin,

Ipecac., Larix, Lobelia, Oxygen, Peronine, Plumbi Acet., Pulv. Ipecac. Co., Scilla, Croton. Lin., Senega, Sinapis Cataplasma, Yerba Santa, Terebinth. Ol.

*Bronchitis Chronic.* Acid. Benzoicum, Æthyl Iodidum, Ammon. Carbonas, Iodi Fortis Liq. and Vapor, Asafetida, Bals. Peru and Tolu, Tinctura Benzoini Co., Chloral, Coninæ (Vapor), Copaiba, Creosoti Vapor, Cubeba, Dionine, Eucalypti Oleum, Euphorb. Pilulif., Grindelia, Heroin, Heroin Hydrochloride, Hydrogenii Peroxidi Liquor, Ipecacuanha, Larix, Lobelia, Morrhuæ Oleum, Opium, Peronine, Pini Ol., Pini Sylvest. Ol., Pruni Virginianæ Syrup., Quillaia, Quinina, Scilla, Senega, Serpentaria, Sulphur, Tar Syrup, Tar Water, Terebene, Terebinthinæ Ol.

*Bronchocele.* Acidum Fluoricum Dil., Ammon. Fluoride, Hydrarg. Iodid. Rub. Ung., Iodoformum, Iodum, Potass. Iodid., Sodii Iodidum, Thyroglandin, Thyroidei Liquor, Thyroideum Siccum.

*Brow Ague.*—See *Neuralgia*.

*Bruises.*—Acetum, Acid. Acetic. Dil., Alum, Anthemis, Arnica, Calendulæ Flor., Calendulæ Tineturæ, Capsicum, Hamamelis, Plumb. Subacet. Dil. Liq., Saponis Linim., Sodii Chlorid., Sp. Vini Rect., Ammon. Chloridi Lotio.

*Bubo, Acute:* Glycerin. Belladonnæ, Iodoform, Lotio Acidi Carbolicæ, Liquor Chlori.

*Bunions.* Amadou Plaster, Cupri Oleatis Ung.

*Burns and Scalds.* Acid. Borici Ung., Acid. Picric. (Solutio), Oleum Carbolicum, Acid. Salieyl. Lotio, Amylum, Bismuth. Subnitras, Calcis Lin., Calcii Carbonas Præcip., Calcis Chlorin. Liquor, Carron Oil, Cocaina, Collodium, Creosotum, Creta Præpar., Eucalyptus Gauze or Oil, Iodoformum and Vaseline, Flour, Gossypium, Lini Oleum, Olivæ Oleum, Orthoform, Sp. Rect.

*Bursitis, Acute:* Acid. Carbol. (inject.), Blister, Tinct. Iodi (paint or inject.), Zinc. Chlorid. (inject.).

*Calculi, Lithic Acid.* Ammon. Benz., Ammon. Boras, Ammon. Phosph., Lithium Salts, Piperazine, Potassii Acetas, P. Bicarb., P. Carb., P. Citras, P. Nitras, Sodii Bicarb. *Mineral Waters:* Carlsbad, Fachingen, Friedrichshall, Pullna, Vals, Vichy, Wiesbaden.

— *Phosphatic.* Acid. Benzoic., Acid. Nitric. Dil., Acid. Phosph. Dil., Pareiræ Extr. Liquid., Tonics.

*Calculus, Renal.*—See *Colic, Renal*.

*Cancer.* *Locally:* Acid. Carbol., Acid. Nitric., Acid. Sulph. (Nordhausen), Arsenical Paste, Glyc. Acid. Tannic., Antim. Chloride, Conium, Hydrarg. Nit. Acid. Liq., Iodoform, Potassa cum Calce, Potass. Permanganas, Sodii Cinnamas, Strontii Cinnamas, Sodii Meta-vanadas, Zinci Chloridum. *Internally:*

Acid. Arsenios., Chelidonium, Chloral Hydras, Exalgin, Opium, Terebinth. Chia.

**Carbuncles.**—See *Boils*.

**Cardiac Tonics.**—See *Tonics*. Section A,

**Carminatives.**—Section A.

*Catarrh of the Respiratory Passages* (common cold). Acid. Carbolic. (Vapor.), Acid. Salicylici (Vapor), Aeonitum, Ammoniacum, Ammon. Benz., Ammon. Chlor. (Vapor.), Sp. Ammon. Fetid., Amygdala Dule., Antim. Tart., Apomorphina, Bals. Peruv., Bals. Tolutanum, Benzoin Vapor and Insuflat., Camphora, Cetraria, Cimicifuga, Cinchonidinæ Hydrobromiduni, Dulcamara, Eucalyptus, Euphorbia Pilulifera, Ferrier's Snuff, Glycyrrhiza, Hordei Decoctum, Ipecacuanha, Linum, Lobelia, Menthol, Sp. Æther. Nit., Myrrha, Opium, Pini Oleum, Pix Liquid., Pulv. Ipecac. Co., Quininæ Sulph., Sodii Chloridum, Smelling Salts, Senega, Syr. Pruni Virg.

— *Vesical.*—See *Cystitis*.

**Cathartics.**—Section A.

**Caustics.**—Section A.

*Chafing of Skin.* Calamine, Dusting Powder, Starch, Violet Powder.

*Chancres.* Acid. Nitric., Acid. Pyrogall., Acid. Sulphuros., Argenti Nitratas, Eucalyptol, Bismuthi Subiodid., Iodoform, Idol, Hydrgarg. Lotio Nigra, Hydr. Nitrat. Liq. Acid., Hydr. Ox. Rubr., Potass. Permang., Resorcin. *All locally.*

*Chapped Skin.* Amyli Glycerinum, Cerat. Camphor., Glycerini Unguentum, Glycerin with Rose Water, Lanolin, Vaseline, Uug. Aq. Rosæ.

*Chilblains.* Acid. Sulphuros., Alum Poultice, Amyli Glycerinum, Argenti Nitratas, Belladon. Lin., Boracis Ung., Calcii Chloridum, Calcis Chlorinatæ Liq., Capsici Lin. or Tinct. Fort., Creosotum, Glycerinum, Ichthyol, Iodi Unguent., Opii Lin., Ung. Glyc. Plumb. Subacet., Ung. Acid. Carbolic.

*Chlorosis.* Acid. Arsenios., Ferri Bromidi Syrup., Ferri Cacodylas, Ferrichthylol, Ferri Chlorox. Liq., Ferri Lactas, Ferri Perchlor. Tinct., Ferri Protochlor., Ferri Sulphas, Ferri Pil., Ferripyrin, Ferrum Redactum, Lecithin, Magnesii Cacodylas, Niccoli Sulphas, Orexiu, Orexin Hydrochloride, Orexin Tannate, Sodii Cacodylas, Di-sodii Methylarsenas, Sodii Meta-vanadas, Somatose, Iron Somatose. *Mineral Waters:* Contrexéville, Fransensbad, Levico, Rippoldsau.

**Cholagogues.**—Section A.

*Cholera.* Acid. Tannic (Enema), Ammon. Carb., Argenti Nitratas, Camphor, Capsicum, Catechu, Creta, Board of Health Cholera Mixture, Creosotum, Opium, Plumbi Acet., Pulv. Salinus (Dr. Stevens), Salol, Sodii Chlorid., Tinct. Chlorof. et Morph. Co.

— *Infantum.* Acid. Lacticum Dil., Acid. Salicylicum, Acid.

Sulph. Dil., Bismuth. Salicylas, Creosotum, Hydr. Subchlor., Menth. Pip. Ol., Plumbi Acetas, Resorcin, Rhenum, Ol. Ricini, Salol.

*Chordee.* Aconitum, Belladonna Suppos., Camphor, Cannabis Indica, Chloral, Lupulinum, Morphine or Opium Suppos., Potassii Bromidum.

*Chorcia.* Antipyrine, Argenti Nitrás, Arsenic. Liquor, Auri et Sodii Chloridum, Camphora Monobrom., Chloral, Cimicifugin, Conium, Cupri Sulphas, Curara, Ferri Pil., Gelsemium, Hyoscyamus, Nux Vomica, Physostigma, Ruta, Sodii Salicylas, Valeriana, Zinci Bromid., Zinci Sulphas, Zinci Valerianas.

*Cold in the Head.*—See *Coryza*.

*Colic, Intestinal:* Æther, Ammonia, Belladonna, Cajuputi Ol., Opinm., Ricini Oleum, Tr. Chlor. et Morph. Co.

— *Hepatic:* Æther, Belladonna, Cannabis Indica, Chloral, Chloroform (inhalation), Opium. Hot baths.

— *Renal:* Ammon. Boras, Amyl Nitris, Belladonna, Cannabis Indica, Collinsonia, Chloroform (inhalation), Opium, Pipazine, Piperidine Tartrate. Hot baths.

*Conjunctiva, Inflammation of.*—See *Ophthalmia*.

*Constipation.* Aloes Decoct. Co., Aloin, Belladonna, Cambogia, Cascara Sagrada, Cassiæ Pulp., Colocynth. Pil. Co., Croton Ol., Elaterini Pulv. Co., Ficus, Glycerin (cneima or suppos.), Glycyrrh. Pulv. Co., Hydrarg. Subchlor., Iridin, Jalap, Magnesia, Magnesii Sulph., Manna, Mel, Nux Vomica, Olivæ Ol., Podophyllin, Potass. Tart. Acid., Ricini Ol., Rhenum, Sapo Castil., Scammonium, Senna, Soda Tartarata, Sodii Phosphas, Sodii Sulphas, Sulphur. *Mineral Waters:* Carlsbad, Friedrichshall, Hunyadi Janos, Pullna.

— *of Infants.* Cassiæ Pulpa, Cascara Elixir, Glycyrrh. Pulv. Co., Magnesia, Rhei Pulv. Co., Ricini Oleum, Scammon. Pulv. Co., Sennæ Syrupus.

— *Habitual:* Aloin, Belladonna, Cascara Sagrada, Coloc. Co. Pilula, Cassiæ Pulpa, Euonymin, Nux Vomica, Podophyllin, Senna.

— *Obstinate:* Cambogia, Colocynthis, Croton. Ol., Tabaci Enemata, Podophyllin.

*Consumption.*—See *Phtisis*.

*Convalescence from Acute Disease.* Acid. Phosph. Dil., Calumba, Cascarilla, Chirata, Cinchona, Cusparia, Ferrum Salts, Hypophosphites, Quassia, Quinine, Strychnine.

*Convulsions.* Ammon. Fetid. Sp., Asafetida (Enema), Belladonna, Cannabis Indica, Chloral Hydras, Chloroform, Hyoscyamus, Opium, Potass. Bromid., Rutæ Oleum.

*Cornea, Abscess of.* Abri Infusum, Atropine, Boric Acid, Hydrarg. Perchlor.

*Cornea, Inflammation and Ulceration of.* Argenti Nitrás, Atropinæ Sulph., Belladonna, Hydrarg. Ox. Flav. Ung., Physostigmina.

*Corns.* Acid. Aceticum Glaciale, Argent. Nitrás, Collodium Salicylicum, Cupri Oleatis Unguentum, Plumbi c. Sapone Emp.

*Corpulency.*—See *Obesity*.

*Coryza.*—See *Catarrh*.

*Cough.* Acid Hydrocyan. Dil., Acid. Sulph. Dil., Antim. Vinum, Acaciæ Gum., Agaricus, Amygdalæ Aqna and Mistura, Apomorphina, Bals. Tolu, Benzoin. Tinct. Composita, Codeinæ Svr. and Pastilles, Coninm, Copaiba, Creosoti Vapor, Cubeba, Glycerinum, Glycyrrhiza, Ipecacuanha, Linum, Lactuca, Lobelia, Morphinæ et Ipecac. Troch., Opium, Piscidia, Pix Liquida, Scilla, Styrax Præp., Terebenum.—See also *Expectorants*, Section A.

—*Spasmodic.* Acid. Hydrocyan. Dil., Belladonna, Cannabis Indica, Ammon. Brom., Chloral Hydras, Tinct. Camph. Comp., Cerii Oxalas, Conium, Hyoscyamus, Opium, Pruni Virg. Syrupus, Stramonium.

*Cramp.*—See *Antispasmodics*.

*Croup.* Anti-diphtherial serum, Aconite, Apomorphina, Emetics, Alum, Antim. Tart., Cupri Sulph., Ipecacuanha, Lobelia.

*Locally:* Acid. Lactic, Papain. *Externally:* Camph. Linim. Co.

*Cutaneous Diseases.*—See *Eczema, etc., etc.*

*Cystitis.* Acid. Benzoic., Acid. Boracic., Acid. Camphoric., Ammonii Benzoas, Argent. Nitrás (Injectio), Bellad. Supposit., Betol, Buchu, Cantharis, Capsicnm, Cocaine Lactate, Collinsonia, Cystamine, Cubeba, Grindelia, Glusidum, Guaiacol Cinnamate, Hexamethylenetetramine, Helmitol, Hydrastis, Naphthalene, Pareira, Potassii Benzoas, Quinine, Salol, Sodii Benzoas, Sodii Salicylas, Thymol, Uresin, Urotropine, Uva Ursi.

*Dandriff.* Borax Lotion, Hyd. Ammon. Ung., Oleum Carbolicum, Paraffin. Molle Sapo Mollis.

*Deafness.* Amygdalæ Oleum, Carbon Bisulphidum (Vapor), Pilocarpina (hypodermic).

*Debility.* Acid. Arsenios, Alcohol, Cajuputi Ol., Calumba, Chemical Food (Squire), Cinchona, Coca, Ferrum salts, Gentiana, Hypophosphites, Morrhuæ Ol., Quassia, Quininæ et Ferri Citras, Strychnina.

*Delirium.* Antim. Tart., Belladonna, Cannabis Indica, Hyoscyaminæ Sulphas, Hyoscinæ Hydrobromidum, Methylal, Opium, Potass. Bromidum.

—*Tremens.* Ammoniæ Liquor, Amylene Hydrate, Antim. Tart., Arnica, Cannabis Indica, Camphora, Camphora Monobrom., Capsicum, Chloral Hydras, Chloroformum, Digitalis, Hyoscyaminæ Sulphas, Hyoscinæ Hydrobromidum, Hypnal, Opium, Potass. Bromid., Strychnina, Sulphonal.

**Demulcents.**—Section A.

*Depilatory.* Calx Sulphurata, Barii Sulphidum.

**Desiccants.**—Section A.

*Diabetes.* Acid. Arsenios., Acid. Lactic. Dil., Acid. Phosphor. Dil., Almond Cakes, Antipyrine, Arsenii Bromidi Liquor, Creosotum, Codeina, Ferri Perchlor. Tinct., Ferri Phosphas, Glusidum, Guaiacol Benz., Hydrogenii Peroxidi Liquor, Jambul, Lævulose, Morphina, Pancreatin, Pilocarpina, Phosphorus, Potass. Permanganas, Sodii Bicarbonas, Sodii Salicylas, Uranii Nitrás. *Mineral Waters:* Carlsbad, Vichy.

—*Insipidus.* Ergota.

**Diaphoretics.**—Section A.

*Diarrhœa.* Acid. Carbolicum, Acid. Gallicum, Acid. Nitric Dil., Acid. Phosph. Dil., Ac. Sulph. Arom., Acid. Sulph. Dil., Acid. Tannic., Alumen, Amylum, Argent. Nitrás. Belæ Fructus, Belæ Confectio, Bismal, Bismuthi Subnitras, Bismuthi Salicylas, Bismuthi et Cerii Salicylas, Bismuthi Subgallas, Calcis Liquor, Calcii Carbon. Præcip., Calcis Sacch. Liquor, Camphoræ Essentia, Capsicum, Carbo Ligni, Catechu, Cotoin, Creta Præp., Cretæ Aromat. Pulv., P. Cretæ Aromat. c. Opio, Cupri Sulph., Cholera Mixture, Doveri Pulv., Eucalypti Gummi, Ferrum Salts, Fortoin, Glutanol, Granati Cort., Guaiacol Valerianate, Guarana, Hæmatoxylum, Honthin, Hydrarg. cum Creta, Kino, Linum, Naphthol, Opium, Plumbi c. Opio Pil., Plumbi Acetas, Quininæ Carbolas, Quininæ Salicylas, Resorcin, Rhei Tinct., Ricini Oleum, Salol, Sassafras Medulla, Simaruba, Dr. Stevens' Pulvis Salinus, Tannalbin, Tannigen, Tanocol, Tannoform, Tannone.

—*Chronic:* Cascarilla, Coto, Cupri Sulph., Cinchona, Ferri Pernit. Liquor, Hæmatoxylum, Krameria, Plumbi Acetas, Quininæ Sulph., Simaruba, Tannigen.

*Diphtheria.* Acid. Carbolic. Glycerin., Acid. Hydrochloric., Acid. Lacticum (paint and spray), Acid. Nucleinic. and salts, Acid. Sulphuros. (spray), Anti-diphtherial serum, Argenti Nitrás, Chlori Liquor, Eucalyptol, Ferri Perchlor. Liq. Fort., Helenin, Hydrarg. Perchlor., Hydrog. Peroxidi Liquor, Iodi Tinct., Iodoform, Idol, Mag. Sulphis, Menthol Pigmentum, Papain (paint), Phenol Camphor, Potass. Permanganas, Quininae Sulphas, Resorcin, Sodæ Chlorinatæ Liquor, Sulphur (insufflatio).

*Dipsomania.*—See *Alcoholism.*

**Disinfectants.**—Section A.**Diuretics.**—Section A.

*Dropsy, in all forms.* Ammon. Benzoas, Ammon. Chlorid., Buchu, Cambogia, Colchicum, Croton. Ol., Hydrarg. Subchlor., Jalapa, Juniperi Oleum, Lactuca, Potass. Acet., Potass. Iodidum, Potass. Tart. Acid., Scilla, Scoparium, Spir. Ætheris Nitrosi, Theocin, Veratrum Viride.

*Dropsy, Cardiac*: Apocynum, Caffeina, Convallaria, Digitalis, Diuretin, Elaterium, Juniperi Oleum, Resina Copaibæ, Scilla, Sparteina, Strophanthus, Saccharum Lactis, Ulexine, Veratrum Viride.

— *Hepatic*: Ammon. Chlor., Copaiba, Hydrarg. Pil., Hydrarg. Subchlor., Hydrarg. Subchlor Co. Pil., Juniperi Oleum, Taraxacum.

— *Renal*: Æther. Nitrosi Spiritus, Ammon. Acetat. Liquor, Apocynum, Copaiba, Diuretin, Digitalis, Elaterium, Hydrargyri Pil., Jalapa, Juuiperi Oleum, Pilocarpina, Potassii Iodidum, Acetas et Nitrás, Scilla.

*Dysentery*. Acid. Gallie., Acid. Tannic., Alumen, Belæ Fructus, Belæ Confectio, Bismuth Cerium Salicylate, Cascarillæ Infus., Catechu, Cubebæ Oleum, Cupri Sulph., Cuspariaæ Infusum, Doveri Pulv., Guarana, Gummi Rubrum, Hamamelis, Hæmatoxylum, Hydrarg. Perchlor., Ipecacuanha, Lini Decoct., Naphthalene, Opium, Phenol Iodatum, Plumb. Acet., Ricini Oleum, Salol, Salicylates, Simaruba, Sodæ Chloriu. Liq., Tannigen, Terebinth. Ol.

— *Chronie*. Argenti Nitrás (enema), Cetraria, Cusparia, Eucalypti Gummi, Guarana, Hæmatoxylum, Ferri Perchlor. Tinctura, Intestinal Antiseptics, Ipecac. c. Opio Pulvis, Kino, Potass. Permang., Plumbi Acet., Plumbi Pil. c. Opio, Rheum, Salol, Simaruba, Tannigeu.

*Dysmenorrhœa*. Ammon. Acetat. Liquor, Amyl Nitris (inhalation), Antipyrine, Apiol, Belladonna, Bromides, Cannabis Indica, Cimicifuga, Ergota, Guaiaci Resina, Pulsatilla, Senega, Viburnum, Phenacetiu.]

*Dyspepsia*. Acid. Arseuios, Acid. Carbolic., Acid. Hydrochlor. Dil., Acid. Hydrocyan. Dil., Aloes, Ammoniæ Liquor, Ammonii Carbonas, Argenti Nitrás, Bismuthi Carb., Bismuthi Subnitras, Buchu, Calc. Carb. Praecip., Calcis Liq., Carbo Ligni, Caryophylli Ol., Cascarillæ Inf., Cerii Oxalas, Creosotum, Gentiana, Nux Vomica, Limonis Cortex, Magnesia, Magnesii Carbonas, Malt Extract, Papain, Pepsin, Peptonised Foods, Potassæ Liquor, Potass. Bicarb., Potass. Bichrom., Potass. Sulph., Quassia, Quininæ Sulph., Rheum, Salicinum, Sapo Durus, Senna, Serpentaria, Sodæ Liq., Sodii Bicarb., Sodii Glycocholas, Sodii Sulpho-carbolas, Sodæ Chlorin. Liq., Somatose, Zingiber. *Mineral Waters*: Alet, Apollinaris, Charlottenbrunneu, Dinsdale, Ems, Gilsland, Homburg, Orezza, Vals.—See also *Carminatives*, and *Tonics, Stomachie*. Section A.

*Dyspepsia, Atonie*: Acid. Hydroch. Dil., Anthem. Inf., Armoracia, Calumba, Camphora, Capsicum, Ferrum salts, Chiretta, Gentiana, Hydrastis, Nux Vomica, Papain, Pepsin, Piper Nig., Potassii Bichromas, Sodii Bicarb., Taraxacum, Zingiber.

— *Irritative*: Bismuthi Subnitras, Cerii Oxalas, Papain, Pepsin.

*Dyspnœa*. Æther, Æthyl Iodidum, Amyl Nitris, Lobelia, Nitroglycerin, Oxycamphor, Pyridin, Sodii Nitris.

*Earache.* Glycerinum, Almond Oil with Cocaine, Morphine, or Opium Tincture.

**Ecbolics.**—Section A.

*Eczema.* Acid. Arseniosum, Acid. Carbolic., Acid. Salicylic., Adeps Lanæ, Alkaline Solutions, Aluminii Oleas, Argenti Nitras, Aristol, Bismuthi Lotio, Cadinum Oleum, Calc. Carbon. Præcip., Camphora, Creosoti Ung., Cremor Lithargyri, Creta Præp., Creolin, Dermatol, Epicarin, Europhen, Gallanol, Glycerinum, Hyd. Ammon. Ung., Hydrarg. Subchlor. Ung., Ichthyol, Lycopodium, Pepsinum, Picis Liquidae Ung., Potass. Carb. (Lotio), Resorcin, Sodii Arsenas, Sodii Carb., Sodii Sulpho-ichthyolum, Sozoiodol, Zinci Oxidum, Ung. Glycerin. Plumbi Subacetatis. *Mineral Water:* Aix-les-Bains.

—*Chronic:* Acid. Arseniosum, Ol. Betulæ Ung., Cadinum Oleum, Hydrarg. Nitrat. Ung., Hyd. Oxid. Flav. Ung., Naphthol, Paraffinum Liquid., Resorcin, Zinci Oxidum.

**Emetics.**—Section A.

*Emmenagogues.*—Section A.

**Emollients.**—Section A.

*Epilepsy.* Acid. Arseniosum, Æthylene Bromide, Ammon. Bro-mid., Amyl Nitris, Amylene Hydrate, Argenti Nitras, Atropinæ Sulph., Auri Bromidum, Auri et Potassii Bromidum, Belladonna, Bromethylformine, Bromipin, Bromo-hæmol, Camphora Monobrom., Castoreum, Cerii Oxalas, Chloretone, Cupri Sulphas, Ferri Perchlor. Tinct., Lithii Bromidum, Moschus, Niccoli Bromidum, Nitro-glycerin, Opium, Pierotoxinum, Potassii Bromidum, Rubidium Bromide, Rubidium Ammonium Bromide, Sodii Nitris, Spermin, Strontii Bromidum, Strychnina, Valeriana, Zinci Bromidum, Zinci Lactas, Z. Sulph., Z. Valerianas.

*Epistaxis.* Acid. Tannic., Adrenalin, Alum, Ergota, Galla, Gummi Rubri Extract. Liquid., Ferri Chloroxydi Liquor, Hamamelis, Suprarenal Gland and Extract, Terebinth. Ol.

*Erysipelas.* *Locally:* Acid. Carbolicum (spray), Acid. Sulphurosum (spray), Amyli Glycer., Amylum, Argenti Nitras, Belladonnae Glycerinum, Collodium, Creosotum, Guaiakinol, Ichthyol, Iodi Liquor Fortis, or Ung., Lycopodium, Salol, Thiol. *Internally:* Aconitum, Belladonna, Cinchona, Ferri Perchlor. Tinct., Guaiacol, Lactophenin, Quinina.

**Escharotics.**—Section A.

*Evacuations, Fetid.* Acid. Carbolic., Calomel, Salol, Sodii Salicylas, Potass. Permangan., Sodæ Chlorinatæ Liquor.

*Excoriations.* Alum, Acid Boracic, Amylum, Boracis Glycerinum, Calamina Præp., Fuller's Earth, Glycerini Ung., Plumbi Carb., Zinci Oxid.

**Expectorants.**—Section A.

*Expectoration, Fetid:* Acid. Carbolic., Creosotum, Potass. Per-

manganas, Chlori Liq., Menthol and Guaiacol (by intralaryngeal injection).

*Eye, to contract pupil of.* Physostigmina, Pilocarpina.

— *to dilate pupil of.* Atropina, Belladonna, Daturina, Duboisina, Homatropina, Hyoscyamina, Hyoscina, Scopola, Stramonium, Gelsemium (*locally*).

*Fæces, Impacted.* Lini Ol. Enema, Ricini Olei Enema, Ol. Olivæ Enema.

*Fainting.*—See *Syncope*.

**Febrifuges.**—Section A.

*Feet, perspiring.* Acid. Boracie., Iodol, Pulvis Salicylic. cum Taleo, Salicylic Suet, Zinci Ung.

*Fever.*—See *Antipyretics*. Section A.

— *hay.*—See *Hay Fever*.

— *intermittent.* Arsenicalis Liquor, Berberis, Aristochin, Euquinine, Capsici Tinct., Cascarilla, Cinchona, Cinchonidina, Cinchonina, Cinchonidine Sulpho-carbolate, Cuspariae Cort., Methylene Blue, Phenocoll Hydrochloride, Pilocarpine Phenate, Quiniua, Quin. Hydrobrom. Acid., Quin. Hydrochlor. Acid., Salicin.

— *remittent.* Cinchona, Bebeerinæ Sulphas, Quininæ Sulphas and Sulphas Acida.

— *Scarlet and Puerperal.* Acid. Carbolicum, Acid. Sulphurosum, Aconitum, Ammon. Benz., Ammon. Carb., Belladonna, Sodii Salicylas, Warburg's Tincture. *Locally:* Acid. Acetic. (vapor), Acid. Carbol. (spray), Acid. Sulphurosum (spray), Chlori Liquor, Resorein, Soda Chlorinatae Liquor.

— *Typhoid.* Acid. Carbolic., Acid. Nitr. Dil., Acid. Sulphuros., Ammon. Liq., Amyli Enema, Acetanilide, Argent. Nitr., Belladonna, Calomel, Chlori Liq., Intestinal disinfectants, Cusparia, Guaiaciform, Guaiacol Phosphate, Magnesii Salicylas, Naphthalene, Naphthol, Opium, Phenacetin, Phenocoll Hydrochlor., Potass. Permang., Pyramidon, Quinina, Quinaphthol, Salicinum, Salol, Saloquinine, Thallinæ Sulphas, Thymol.

*Flatulence.* Acid. Carbolicum, Acid. Sulphurosum, Æther, Aloes, Anethum, Anisum, Armoraciae Spirit. Co., Asafetida, Bismuth Salts, Cajuputi Ol., Calumba, Capsicum, Carbo Ligni, Caryophyllum, Creosotum, Fœniculi Ol., Lavand. Oleum, Magnesia, Menthae Pip. Ol., Menthae Virid. Ol., Piper Nigrum, Rutæ Enema, Sodii Bicarb., Sodii Hyposulphis, Sodii Salicylas, Sodii Sulphocarbolas, Terebinthinae Enema, Zingiber.

*Flooding.*—See *Hæmorrhage, Uterine*.

*Gall Stones.* Æther, Amyl Nitris, Belladonna, Chloral Hydras, Chloroformum, Morphina, Nitroglycerin, Olivæ Oleum, Ricini Oleum, Sapo Durus, Sodii Sulphas, Sodii Phosphas, Terebinthinae Oleum. *Mineral Water:* Carlsbad.

*Gangrene.* Tonics and stimulants. *Locally:* Antiseptics.

*Gastralgia.* Acid. Arseniosum, Acid. Carbolic., Acid. Hydrocyan. Dil., Æther, Argenti Nitrás, Belladonna, Bismuth Salts, Carbo Ligni, Cerii Oxalas, Cocaina, Exalgin, Manganesii Oxidum Nig., Opium, Pepsin, Potass. Bicarb., Potass. Bichromas, Potass. Bromid., Sodii Bicarb., Strontii Bromidum, Tinct. Chlorof. et Morph. Co. Mineral Water : Contrexéville.

*Generative Organs, loss of tone.*—See *Aphrodisiacs*.

— *Sedative of.*—See *Anaphrodisiacs*.

*Glands, enlarged and indurated.* Acid. Arseniosum, Ammonii Chloridum, Ammoniaci c. Hydrarg. Emplast., Belladonnæ Glycerinum, Calcii Chlorid., Calx Sulphurata, Carbon Bisulphidum, Fucus Vesiculosus, Hydrarg. Iodid. Rub., Morrhuæ Oleum, Hydrarg. Subchlor., Hydrogenii Peroxidi Liquor, Iodi Liquor Fortis, Iodi Tinct. (inject.), Iodoform, Potass. Iodid., Lin. Potass. Iodid. c. Sapone, Soda Chlorinatæ Liquor. Mineral Waters : Koenigsdorff, Leuk, Marienbad.

*Gleet.* *Internally* : Bals. Peruvianum, Cantharis, Capsicum, Copaiaba, Creosotum, Cubebs, Ferri Perchlor. Liquor, Santali Oleum. *Locally* : Acid Tannic, Acid Gallic, Cupri Sulphas, Ergotæ Infusum, Orthoform Hydrochloride, Plumbi Acetas, Potass. Permang., Zinci Chloridum, Zinci Sulphas.

*Goître.*—See *Bronchocele*.

— *Exophthalmic* : Ammon. Pieras, Digitalis, Ergot, Ferrum, Opium, Strophanthus, Suprarenal Gland, Thyroglandin, Thyroidei Liquor, Thyroideum Siccum.

*Gonorrhœa, Acute.* *Internally* : Aconitum, Antim. Tart., Gonal, Hordei Decoct., Lini (Inf.), Methylene Blue (Pure), Pareira, Potass. Bicarb., Santal. Flav. Ol. *Locally* : Actol, Argentamine, Argenti Nucleinas, Argonin, Alumen, Borax, Betol, Bismuth. Subnit., Crurin, Cupri Sulphocarbolas, Hydrarg. Nucleinas, Ichthargan, Itrol, Largin, Iodoform and Eucalyptus Bougies, Potass. Permanganas, Protargol, Zinci Acetas, Z. Chlorid., Z. Permang., Z. Sulphocarbolas.

— *Chronic.* *Internally* : Copaiaba, Cubeba, Dipterocarpi Balsamum, Gonal, Santali Oleum. *Locally* : Acid. Tannic., Argenti Nitrás (bougie), Cupri Sulphas, Plumbi Acetas cum Opio, Quercus, Zinci Acetas, Z. Chloridum cum Belladonna, Z. Sulphas.—See also *Gleet*.

*Gout.* Acid. Arseniosum, Acid. Benzoicum, Ammonii Benzoas, Ammonii Chloridum, Ammonii Phosphas, Caffeinæ Di-iodo-Hydriodide, Cajuputi Ol., Colchicum, Colchicinæ Salicylas, Colchi Sal, Crotonis Lin., Guaiaci Resina, Gynocardiæ Oleum, Hyoscyamus, Lithii Benzoas, L. Bromidum, L. Carbonas, L. Citras, L. Guaiacas, Lysidine, Lyctitol, Magnesia, Morphinæ Inject. Hypod., Phenazonum, Piperazine, Piperazine Quinate (Sidonal), Piperidine Tartrate, Potass. Acetas, P. Citras, Sabina, Saligenin, Seipentaria, Sodii Benzoas, S. Carbonas, S. Phos-

phas, S. Taurocholas, Strontii Salicylas, Sulphur, Trimethylaminæ Hydrochloridum, Uresin. *Mineral Waters*: Adelheidsquelle, Aix-les-Bains, Baden-Baden, Buxton, Carlsbad, Eilsen, Eins, Franzensbad, Ischia, Marienbad, Nenndorf, Neuenahr, Ofen, Plombières, Soden, Strathpeffer, Tarasp, Toëplitz, Vichy, Weilbach, Weisbaden, Wildbad.

*Gout, painful* : Aconitinæ Unguent., Antipyrine, Cajuputi Oleum, Hyoscyamns, Menthol, Morphina, Opium, Potass. Iodidum, Veratrinæ Unguentum.

*Gums, inflamed*. Krameria Tinct., Boracis Glycerin.

— *spongy* : Alnmen, Gummi Rubri Tinet., Myrrhæ Tinct., Potassii Chloras, Quercūs Decoct., Tinct. Myrrhæ et Boracis, Pyrethri Tinct.

*Hæmatemesis*. Acid. Gallicum, Acid. Tannicum, Alumen, Argent. Nitras, Ergota, Ferric Salts, Hamamelis, Opium, Plumbi Acetas, Terebinthinae Oleum.

**Hæmatinics**.—Section A.

*Hæmaturia*. Acid. Sulph. Dil., Acid. Tannic., Acid. Gallicum, Alumen, Ergota, Ferri Perchloridi Liquor, Hamamelis, Plumbi Acet., Terebinthinae Oleum.

*Hæmoptysis*. Acid. Tannicnm, Agaricus, Antipyrine, Atropina, Digitalis, Ergota, Ferri Acetatis Liquor, Hamamelis, Morphina, Opium, Plumbi Acetas, Plumbi c. Opio Pilula.

*Hæmorrhage*.—See *Styptics*.

— *Uterine and post-partum* : Acetum, Acid. Gallic., Acid. Tannic., Cannabis Indica, Cornutinæ Hydrochloridum, C. Citras, Ergota, Ergotine (Inj. Hypod.). Ergotinine, Ferri Perchlor., Hamamelis, Hydrastis, Hydrastininae Hydrochloridnm, Normal Saline Solution (Transfusion), Opium.

*Hæmorrhoids*. Acid. Nitricum (lotio), Aloes Socot., Cascara Sagrada, Cetacei sine Benz. Unguent., Conii Ung., Galbani Ung. Co., Gallæ Ung. and Ung. cum Opio, Glycyrr. Pulv. Co., Hamamelis, Iodoform (Supp.), Picis Pilulæ et Capsnlæ, Piper Nigrnm, Plumbi Co. Snpos., Sulphnr. *Mineral Waters* : Luhatschowitz, Mergentheim.

**Hæmostatics**.—Section A.

*Hair falling off*.—See *Alopecia*.

*Hay Fever*. Adrenalin, Antipyrine, Belladonna, Camphoræ Spirit., Cannab. Ind., Carbon Tetrachloride, Cocaina, Encalypti Olenm, Grindelia Robnsta, Hydrarg. Biniodidum (spray and donche, 1 in 2000), Lobelia Inflata, Mentholum, Potass. Iodid., Qnininæ Sulphas Acidns, Stramonium, Carbolised Smelling Salts, Suprarenal Gland and Extract.

*Headache, nervous*. *Internally* : Acid. Hydrobrom. Dil., Ammon. Bromid., Ammon. Liquor., Ammon. Aromat. Spirit., Amyl Nitris (vapour), Antipyrine, Acetanilide, Butyl-Chloral Hydras,

Cannabis Ind., Cimicifuga, Caffeina, Exalgin, Guarana, Lactophenin, Magnesia, Nitroglycerin, Phenacetin, Potass. Bromid., Quininæ Sulphas., Sodii Bicarb. *Locally*: Aconitum, Æther, Belladonna, Camphora, Cocaina, Menthol.

*Hcart, Valvular Disease of.* Adonis Vernalis, Apocynum, Caffeina, Æthoxycaffeineum, Convallaria, Digitalis, Erythrophleum, Sparteina, Strophanthus.

*Heartburn.*—See *Pyrosis*.

*Hectic Sweating.*—See *Sweating*.

*Hcpatics.*—See *Cholagogues*. Section A.

*Hepatitis.*—Acid. Nitro-hyd. Dil., Ammon. Chlorid. Hyd. Subchlorid., Pil. Hydrarg.

*Herpes.* *Internally*: Morphinæ Tart. (hypod. inj.), Potass. Iodid., Purgatives, Quininæ Sulphas. *Locally*: Acid. Boracic., Amyl Glycerinum, Argenti Nitrás, Cocaina, Hydrarg. Ammon., Menthol, Zinci Ung.

*Hiccough.* Ætheris Spt.; Amyl Nitris, Anethum, Apomorphina, Belladonna, Camphor, Chloral, Chloroformi Spt., Ergota, Pilocarpina, Sinapis (Infusum).

*Hydrocele.* Glycerinum and Tinctura Iodi.

*Hydrocephalus.* Crotonis Oleum, Hydrarg. Subchloridum, Potass. Bromidum, Potass. Iodidum.

*Hydrophobia.* Aconitum, Cannabis Indica, Cantharis, Chloral Hydras, Chloroformum, Curara, Morphina.

*Hypnotics.*—Section A.

*Hypochondria.* Acid. Nitro-hydrochlor. Dil., Cholagogues, Chloral Hydras, Lavandulæ Oleum, Nervine Tonics, Potassii Bromidum, Strychnina. *Mineral Water*: Homburg.

*Hysteria.* Ammoniæ Fetidus Spiritus, Ammonii Carb., Ammon. Bromid., Ammon Valerianas, Asafetida, Auri Bromidum, Caju-puti Ol., Camphora, Camphora Monobromata, Castoreum, Tinct. Chlorformi et Morphinæ Co., Ferrum salts, Lavand. Ol., Menthol Valerianate, Moschus, Nux Vomica, Phosphorus, Potass. Bromid., Quininæ Sulph., Rosmarini Ol., Rutæ Ol., Strychnina, Sumbul, Terebinthinæ Ol., Valeriana, Zinci Phosphidum, Z. Valerianas. *Mineral Waters*: Homburg, Lippik, Spa.

*Impetigo.* Hydrargyrum Ammon. Ung., Iodoformi Ung., Zinci Oleat Ung., Zinci Unguentum.

*Incontinence of Urine.*—See *Urinc.*

*Indigcstion.*—See *Dyspepsia*.

*Inflammation.* *Acute*: Aconite, Antim. Tart., Belladonna, Glycer. Bellad., Hydrarg. Subchloridum, Opium.

— *Chronic*: Iodine and Iodides.

*Influenza.* Acid. Sulphurosum (vapor), Ammon. Acetat. Liq.,

*Antim.* Tart., Antipyrine, Benzoini Vapor, Benzol, Eucalypti Oleum, Ipecac. Co. Pulvis, Phenocoll Hydrochloride, Potass. Bicarb., Quinina, Salicinum, Salipyrin, Sodii Salicylas, Sp. Æther. Nitr., Tinct. Quininæ Ammoniata.

*Insects, to keep away.* Camphora, Colocynth. Pulpa, Lavand. Oleum, Pyrethri Flores, Quassia, Rosmarini Oleum, Terebinth. Oleum.

*Insomnia.*—See *Hypnotics*, Section A.

*Intermittents.*—See *Fever*.

*Iritis.* Acid. Boric., Atropina, Belladonna, Hydrarg. Perchlor. and Subchlor., Hyoscyamus, Potass. Iodidum, Quinina.

*Irritants.*—Section A.

*Issues, to keep open.* Mezerei Ung., Sabinæ Unguentum.

—*to heal.* Acidi Borici Unguent., Cetacei Unguentum.

*Itch.*—See *Seabies*.

*Itching.*—See *Skin*.

*Jaundiee.* Alkalis, Acid. Nitro-hydrochlor. Dil., Aloes, Ammonii Chlorid., Creosotum, Euonymin, Fel Bovinum, Hydrarg. Subchlorid., Iridin, Pilocarpina, Potassa Sulphurata, Podophyllin, Potassii Sulphas, Sapo Durus, Sodii Sulphas, Taraxacum.

<i>Joints, Rheumatic.</i> <i>—Enlarged.</i>	Belladonnae Emp., Iodum, Hydrarg. Oleas, also with Morphia, Ung. Hydrarg. Comp., Lin. Potass. Iod. c. Sapone, Potass. Iodid., Plumbi Iodidi Ung., Sodii Salicylas, Veratrinæ Ung.
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*Kidneys, Diseases of.*—See *Albuminuria, Bright's Disease, Dropsy (Renal), and Uraemia*.

*Laryngismus Stridulus.* Ammonia, Amyl Nitris, Antipyrine, Chloral Hydras, Chloroformum, Potassii Bromidum.

*Laryngitis.* Aconiti Tinct., Antim. Tart., Codeina, Guaiacum. *Locally:* Alum, Ammonium Chloride, Acid. Lactic., Acid. Sulphuros. (spray), Acid. Tannic. Glycerin., Argenti Nit., Benzoini Vapor, Creosoti (vapor), Menthol (spray), Pini Sylvest. Oleum.

*Laxatives.*—Section A.

*Leech bites, to stop bleeding from.* Alum, Argenti Nitratas, Collodium, Ferri Perchlor., Matico, Ol. Terebinth.

*Leeches, to dislodge if swallowed.* Sodii Chloridum.

*Leprosy.* Balsam. Dipterocarpi, Gynocardiae Oleum.

*Leueoeythemia.* Acid. Arseniosum, Bone Marrow, Ferrum Salts, Phosphorus.

*Leucorrhœa.* Acid. Boric., Acid. Carbolic, Acid. Chromic, Acid. Gallic., Acid. Tannic., Alumen, Bismuth. Subnit., Borax, Cantharis, Catechu, Creolin, Cupri Sulphas, Cyllin, Ferrum Salts, Granati Cort., Gummi Eucalyptus, Hæmatoxyl Decoct., Hydrarg. Perchlor., Krameria, Pareira, Potass. Iodidum, Quercus Cort., Santal, Flav. Oleum, Sodii Sulphocarbolas, Tonics, Zinci

Sulph., Zinci Sulphocarbolas. *Mineral Waters*: Kreuznach, Wildungen.

*Licc.*—See *Pediculi*.

*Lichen*. Acid. Arsenios, Acid. Hydrocy. Dil., Acid. Sulphurosum, Argenti Nitras. Glycerinum, Hydrarg. Oxid. Flav. Ung., Ichthyol, Pix Liquida.

*Lips, cracked*. Adeps Lanæ, Bals. Peru. Unguent., Cetacci Ung., Paraffinum Molle.

*Liver, Chronic enlargement of*. Acid. Nitro-hydrochloric. Dil. (*Internally and Externally*). Ammon. Chloridum, Potassii Iodidum.

*Liver, Sluggish or Torpid*. Acid. Nitro-Hydrochlor. Dil., Alkaline Carbonates and Bicarbonates, Ammon. Chlorid., Euonymin, Hydrarg. Subchlorid., Hydrarg. Pilula, Iridin, Magnes. Sulphas, Sodii Sulphas, Soda Tartarata, Podophyllin.—See also *Cholagogues*. Section A. *Mineral Waters*: Aix-la-Chapelle, Carlsbad, Ems, Friedrichshall, Kissingen, Leamington, Pullna.—See also *Colic (Hepatic)*, and *Gall Stones*.

*Locomotor Ataxy*. Acid. Arsenios., Argenti Nitras, Phenacetin, Phenazonum, Ergot, Phosphorus, Physostigma, Pilocarpinæ Nitras, Potass. Iodid.

*Lumbago*. Ammon. Chloridum, Lin. Aconiti, Lin. Bellad. Comp., Cantharid. Emp., Capsicum, Cimicifuga, Lin. Opii, Menthol, Methyl Chloridum, Morphina (hyp. inj.), Opium, Picis Empl., Potassii Iodidum, Purgatives, Quininæ Sulphas.

*Lupus*. Acid. Arseniosum, Acid. Carbolic., Acid. Chromic., Acid. Lacticum, Aristol, Cinchoninæ Iodo-Sulphas, Salicylic and Creosote Plaster Mull, Hydrarg. Iodid. Rub. Ung., Hydrarg. Nit. Acid. Liquor, Hydrarg. Nitrat. Ung., Iodi Causticum, Potassa cum Calce, Potassium Cantharidate, Sodii Ethylatis Liquor, Thiosinamine, Zinci Chlorid.

*Malarial Fever*. Ammonii Picras, Quininæ Sulphas, Warburg's Tincture.—See also *Fever, Intermittent*.

*Mania, Acute*. Ammon. Bromidum, Amylene Hydrate, Atropina, Belladonna, Camphor, Cannabis Indica, Chloral Hydras, Cimicifuga, Crotonis Oleum, Duboisina, Gelsemium, Hyoscinæ Hydrobromidum, Hyoscyamina, Hypnal, Methylal, Morphina, Opium, Paraldehyde, Potassii Bromidum, Sulphonat, Trional.

*Measles*. Aconitum, Æther. Nit. Sp., Ammon. Carb., Ammon. Acet. Liquor, Dover's Powder, Ipecacuanha, Potass. Citras, Quininæ Sulphas.

*Melæna*. Ergot (hypodermic), Ferri Perchlor. (inject.), Hamamelis, Plumbi Acet. cum Opio (inject.), Terebinth. Oleum.

*Melancholia*. Acid. Arsenios., Acid. Nitro-hydroch. Dil., Camphora, Coca, Morphina, Nux Vomica, Paraldehyde, Potassii Bromidum, Trional. Also *Cholagogues*.

*Meningitis, Acute.* Antim. Tart., Hydr. Subchloridum, Digitalis, Ergota, Hyoscyamus, Potass. Bromidum, Potass. Iodidum, Purgatives; Ice externally.

*Menorrhagia.* Acid. Gallic., Aloes, Alumen, Bebeerinae Sulphas, Cannabis Ind., Cannabin. Tannas, Ergota, Ferrum Salts, Hamamelis, Hydrastis, Krameria, Plumbi Acet., Stypticin, Vincae Major. Ext. Fluid., Viburnum.

*Menstruation, Defective.*—See *Amenorrhœa*.

—*Painful.*—See *Dysmenorrhœa*.

*Milk Secretion, to increase.* Alcohol, Jaborandi, Pilocarpinae Nit., Ricini Fol. Decoctum.

—*to diminish.* Atropina and Belladonna Tinctura, Emp. and Glycerinum, Ergota, Purgatives.

*Miscarriage, to prevent.*—See *Abortion, threatened*.

*Mollities Ossium.* Calcii Phosphas, Ferrum Salts, Morrhuae Oleum.

*Mumps.* Aconitum, Hydrarg. cum Creta, Jaborandi, Pilocarpina.

*Nævi.* Acid. Chromic., Acid. Nitric., Alum, Liq. Ferri Perchlor. Fort., Liq. Sodii Ethylatis, Zinc. Chloridum, Zinci Nitrás.

**Narcotics.**—Section A.

*Nausea.*—See *Vomiting*.

*Neuralgia.* Acid. Arsenios., Aconiti Chloroform., Aconiti Linim., Aconitinæ Ung., Aconitum, Æther (spray), Ammon. Bromidum, Ammon. Chlorid., Amyl Nitris, Acetanilide, Amygdophenin, Analgen, Atropinæ Solut. (hypodermically), Belladonnæ Lin., Butyl-Chloral Hydras, Caffeina, Camphoræ Lin., Camphor. Lin. Ammon., Cannabis Indica, Canthar. Emp., Carbon Tetrachloride, Chloral cum Camphora, Chloroformuin, Cimicifuga, Cinchona, Cocaina, Conium, Crotonis Liniment., Delphinina, Exalgin, Ferrum Salts, Gelsemii Tinctura, Gelsimin, Guaiacol, Hyoscyamus, Iodoform, Kryofin, Lactophenin, Malakin, Menth. Pip. Oleum, Menthol, Methyl Chloridum, Migraine, Morphina, Opium, Papaveris (Decoctum), Phenacetin, Phenazonum, Phosphorus, Piscidia, Quininæ Glycerophos., Quininæ Sulph., Salophen, Sinapis (Cataplasma), Veratriñæ Ung., Zinci Valerianas.

*Nipples, Sore.* Acid. Sulphurosum, Acid. Tannic. Glycerinum, Argenti Nitrás, Bals. Peru. Ung., Bóracis Ung., Catechu, Plumbi Tannatis Glycerinum, Sodæ Chlorinatæ Liq.

*Nitrate of Silver stains, to remove.* Potass. Cyanid., Potass. Iodid.

*Nocturnal Emissions.* Belladonna, Ferri Bromid., Potass. Bromid.

*Nymphomania.* Ammon. Bromidum, Camphora, Chloral, Conium, Potassii Bromidum,

**Nutritive.—Section A.**

*Obesity.* Alkalies, Ferri Iodid., Fucus Vesiculosus, Potass. Iodid., Thyroideum Siccum. *Mineral Waters:* Carlsbad, Ems, Kissingen, Marienbad, Tarasp.

*Ophthalmia.* Acid Boracic, Alum, Argent. Iodid., Argent. Nit., Cocaine Nitrate, Cocaine Phenylate, Cuprargol, Hydrarg. Ox. Flav. Ung., Mitigated Caustic.

*Orchitis, Acute.* *Locally:* Glycerinum Belladonnæ, Plumbi Acet. et Opii Lotio. *Internally:* Saline Aperients, Antimonium Tartarat., Guaiacol, Hyoscyamus, Phenylurethane, Phytolacca.

*Otorrhœa.* Acid. Borici Lotio, Iodoform, Iodol, Potass. Permang., Zinci Chlorid., *all locally.*

*Ozæna.* Acid. Carbolic., Acid. Chromic., Acid. Boracic., Borax, Boro-glyceride, Creosotum, Iodoform, Menthol, Potass. Permanaganas, Sodii Chloridum, Sodæ Chlorinat. Liquor, Sodii Ethylatis Liquor, Thymol, Zinci Chlorid., *all locally.*

*Palpitation.* Aconitum, Æther, Ammonia, Belladonna, Bromides, Camphora, Anti-dyspeptic remedies.

*Paralysis (Peripheral and Functional).* Belladonna, Cannabis Ind., Ergota, Ferrum Salts, Hyoscyamus, Nux Vomica, Phytostigma, Strychnina. *Mineral Waters:* Aix-la-Chapelle, Baden-Baden, Eilsen, Ischia, Kreuznach, Toëplitz.

— *of Lead Poisoning.* Alkaline Sulphates, Potassii Iodidum.

*Pediculi.* Bals. Peruvianum, Hyd. Ammon. Ung., Hydrarg. Oleas, Naphthol, Oleum Carbolicum, Staphisagriae Olei Ung.

*Periostitis.* Potassii Iodidum, Counter-irritants, Vesicants.

*Peritonitis, Acute.* Belladonna, Hydrarg. Subchlor., Opium.

*Perspiration, to diminish.*—See *Anhidrotics.* Section A.

*Perspiration, Fetid.* Acid. Boracic., Acid. Carbolic., Acid. Salicylic. Glycer., Belladonna, Plumbi Oxid. (Ung.), Zinci Ung.

*Phthiriasis.*—See *Pediculi.*

*Phthisis.* Acid. Benzoic. (inhal.), Acid. Carbolicum, Acid. Hydrocyan. Dil. (inhal.), Acid. Nucleinicum and Salts, Acid. Tannicum, Acetophenone (inhal.), Acid. Hydrofluoric. (inhal.), Aconiti Tinct., Agaricin, Alcohol Methylicum, Antifebrin, Aniline, Atropina, Calcii Hypophosphis, Camph. Tinct. Co., Carbon. Bisulphidum, Chinosol, Codeina, Conium, Creosotum, Creosote Carbonate, C. Phosphate, C. Valerianate, Dionine, Eucalypti Ol. (inhal.), Ferri Cacodylas, Formaldehyde, Guacetin, Guaiacol, G. Benzoate, G. Camphorate, G. Carbonate, G. Cinnamate, and other Guaiacol Salts, Guaiacyl, Guaiiform, Helenin, Heroine, Heroine Hydrochloride, Igazol, Iodi Vapor, Iodoform, Lachnanthes, Malti Extractum, Menthol (intralaryngeally), Morrhua Oleum, Opium, Peronine, Piperidine Guaicolate, Pneumin, Pilocarpinæ Phenas, Pini Ölum (vapor), Plumbi Acetas, Pruni Virgin. Syr., Quinina and Quinine Salts,

Saccharum Lactis, Salol, Sodii Cacodylas, Di-sodii Methyldarsenas, Sodii Cinnamas, Strychninæ Vanadas, Sodii Hypophosph., Sodii Meta-vanadas, Strontii Cinnamas, Terebenum, Thiocol, Urea.

*Piles.*—See *Hæmorrhoids*.

*Pityriasis Versicolor.* Acid. Aceticum, Acid. Boracic., Argent. Nitrás, Boracis Glycerinum, Hydrarg. Oxid. Rub. Ung., Cadinum Oleum, Naphthol, Picis Ung., Sodii Hyposulphis, Zinci Ung.

*Pleural Effusion.* Apocynum, Canthar. Emp., Digitalis, Iodum, Jaborandi, Magnes. Sulph., Pilocarpina.

*Pleuritis.* Aconitum, Antim. Tart., Canthar. Emp., Crotonis Linim., Hydrarg. Subchlor., Morphina, Potass. Iod., Sinapis Cataplasma.

*Pneumonia.* Aconitum, Ammon. Acetat. Liquor, Ammon. Carbonas, Antim. Tart., Æther. Nitrosi Sp., Caffeina, Canthar. Empl., Digitalis, Helenine, Heroin, Heroin Hydrochloride, Moschus, Oxygen, Potass. Bicarb., Quinina, Sinapis Cataplasma, Sodii Salicylas, Strophanthus.

*Polypi, Nasal.* Locally : Acid. Tannic., Absolute Alcohol, Sodii Ethylatis Liquor, Zinci Chloridum.

*Post-partum Hæmorrhage.*—See *Hæmorrhage, Uterine*.

*Prolapsus Ani.* Acid. Tannic., Alum., Cupri Sulph., Ergotin, Ferri Perchlor., Gummi Rubr. Extr. Liq., Krameria, Nux Vomica, Quercus, Sulphur.

*Prostration.* Æther, Ammonia, Caffeina, Coca, Moschus, Nervine Tonics, Spiritus Vini Gallici Mistura, Strychnina.

*Prurigo.* Internally : Acid. Arsenios., Ammonii Bromid., Hyoscyamus, Quinina, Strychnina. Locally : Acid. Boracic., Acid. Carbolic., Acid. Hydrocyanic. Dil., Argenti Nit., Borax, Cocaina, Cupri Sulphas, Glycerin, Ichthyol, Iodoformum, Papaveris (Decoctum), Liquor Carbonis Detergens, Sulphuris Ung.

*Pruritus Ani.* Acid. Carbolic. Ung., Acid. Salicylic. (Ung.), Gallae c. Opio Ung., Hydrarg. Subchlor. Ung., Menthol, Purgatives.

— *Vulvæ.* Glycerinum Boracis, Cocaina, Ichthyol.

*Psoriasis.* Internally : Acid. Arsenios., Dulcamara, Thyoideum Siccum. Locally : Acid. Carbolic., Acid. Pyrogallic., A. Salicylic., Anthrarobin, Aristol, Betulæ Albæ Olei Ung., Chrysarobinum, Creosotum, Dulcamara (Decoct.), Epicarin, Saponis Emp., Gallanol, Glycerinum, Gynocardiae Oleum, Hydrarg. Sozoiodolas, Hydrarg. Subchlor., Ichthyol and Compounds, Ol. Cadinum, Liquor Carbonis Detergens, Naphthol, Picis Unguent., Potassa Sulphurata, Potass. Iodidum, Resorcin, Sodii Carbonas.

*Puerperal Convulsions.* Chloral, Chloroformum (inhal.), Morphina, Potassii Bromidum.

**Purgatives.**—Section A.

*Purpura.* Ferri Perchlor. Tinct., Quinina, Ergota, Sodii Salicylas, Terebinthinæ Ol.

*Putrescence, to Correct.*—See *Antiseptics.* Section A.

*Pyæmia.* Alcohol, Ammonia, Quinina, Antiseptics.

*Pyrosis.* Acid. Hydrochlor. Dil., Acid. Sulphuros., Argent. Oxid., Bismuthi Subnitras, Bismuth. Carb., Catechu, Cerii Oxalas, Magnesia, Manganesii Oxid. Præp., Opium, Pulvis Doveri, Sodii Bicarb., Sodii Sulphocarbolas.

*Quinsy.*—See *Tonsils, inflamed.*

**Refrigerants.**—Section A.

**Restoratives.**—Section A.

*Retention of Urine.*—See *Urine.*

*Rheumatism. Acute:* Acid. Salicylic., Acid. Benzoic., Aconitum, Acetanilide, Amygdophenin, Antirheumatin, Betol, Canthar. Emp., Cimicifuga, Gaultheriae Ol., Opium, Methyl-Acetyl Salicylate, Methyl Salicylate, Mesotan, Phenazone, Phenocoll Hydrochloridum, Pot. Acetas, Pot. Bicarb., Potass. Citras, Pulv. Doveri, Piperazine Quinate, Pyramidon Salicylate, Quinina, Rheumatine, Salicinum, Saligenin, Salocoll, Salol, Salophen, Sodii Di-thiosalicylas, Sodii Salicylas, Tolypyrrin, Trimethylaminæ Hydrochloridum.

— *Chronic:* Acid. Arseniosum, Acid. Salicylic., Aconiti Lin., Ammon. Chlorid., Ammon. Phosph., Antim. Sulphurat., Armoracia, Asaprol, Betol, Buchu, Camphor. Ol. Essent., Capsici Tinct. Fort., Chloral, Chloroformum Camphoratum (local), Conium, Cajuputi Ol., Citrophen, Crotonis Oleum, Dulcamara, Fluor-rheumin, Gynocardia Ol., Guaiacum, Hydrarg. Iodid. Rub., Hydrarg. et Morphinæ Oleas, Iodi Liquor Fortis, Lin. Camph. Co., Ichthyol, Iodoform, Limonis Succus, Lithii Guaiacas, Lithii Salicylas, Lycetol, Lysidine, Magnesia, Malakin, Menthol, Mesotan, Methyl-Acetyl Salicylate, Methyl Salicylate, Morrhuae Oleum, Myristicæ Oleum, Phenacetin, Opium, Phenazonum, Potass. Iodid., Picis Burgundicæ Emplast., Pini Oleum, Pini Sylves. Ol., Piperazine Quinate, Potassa Sulphurata, Potass. Iodid., Lin. Pot. Iod. c. Sapone, Lin. Saponis, Pyramidon Salicylate, Syr. Quininæ Hydrobromidum and Hydriodidum, Salipyrin, Salol, Sarsaparilla, Serpentaria, Sodii Iodid., Sodii Salicylas, Sulphur, Chelsea Pensioner, Terebinth. Lin., Trimethylaminæ Hydrochloridum. *Mineral Waters:* Aix-les-Bains, Aix-la-Chapelle, Barèges, Baden-Baden, Bath, Berka, Buxton, Franzensbad, Hamman R'Irha, Lucca, Ofen, Toëplitz, Wiesbaden, Woodhall.

— *Painful:* Belladonnæ Chloroformum, Hydrarg. et Morphinæ Oleas, Lin. Camph. Ammon.

*Rickets.* Acid. Phosphor. Dil., Calcis Liquor, Calcii Chloridum,

Calcii Phosphas, Creta Präparata, Ferri Phosphas, Morrhuae Oleum, Chemical Food (Squire).

**Ringworm.** Acid. Acetic., Acid. Salicylic., Acid. Sulphuros., Chrysarobini Ung., Cupri Oleatis Ung., Glycerinum Acid. Carbol., Hydrarg. Nit. Acid. Liq., Hydrargyri Oleas, Hydrarg. Ammoni. Ung., Hyd. Oxid. Rub. Ung., Pigmentum Picis c. Iodo, Ung. Picis, Resorcin, Ung. Sulphuris Comp.

**Rubefacients.**—Section A.

*Salivation, to produce.*—See *Sialagogues*. Section A.

—*to diminish.* Atropina, Belladonna.

**Sarcina Ventriculi.** Acid. Sulphuros., Potassii Sulphis, Sodii Sulphis, Sodii Salicylas.

**Scabies.** Acid. Sulphuros., Bals. Peruvianum, Calcis Chlorinat. Liq., Creosotum, Hydrarg. Ammoniatum, Naphthalene, Naphthol, Potassa Sulphurata, Staphisagriæ Olei Ung., Styracis Ung., Sulphocarbonates, Sulphuris Hypochlor. Ung., Sulph. Co. Ung., Sulphuris Ung.

**Scalds.**—See *Burns and Scalds*.

**Scarlet Fever.**—See *Fever, Scarlet*.

**Sciatica.** Acid. Hydrochloric. (externally), Acouiti Lin., Ammon. Chloridum, Analgen, Asaprol, Iodoformum, Bellad. Lin. Comp., Canthar. Empl., Cimicifuga, Ferri Carb. Sacchar., Guaiacol, Cocaiuaæ Hypoder. Inj., Morphinæ Inj. Hypod., Opium, Phenacetin, Phenazonum, Potass. Iodidum, Purgatives, Sodii Salicylas.—See also *Rheumatism*.

**Scorbutic Affections.**—See *Scurvy*.

**Scrofula.** Barium Chloride, Calcii Chloridum, Calcii Lactas, Calcii Phosphas, Calx Sulphurata, Ferri Iodid., Ferri Phosphatis Syrup. Co. (Chemical Food), Galium Aparine, Hyd. Subchlor., Iodium, Morrhuae Oleum, Potass. Iod., Potassæ Liquor, Pot. Bicarb., Quiuinæ. Sulph., Sodii Iodidum. *Mineral Waters:* Adelheidsquelle, Arnstadt, Barèges, Cauterets, Ems, Ischia, Koenigsdorff, Kosen, Krankenheil, Kreuznach, Luhatschowitz, Neuenahr, Reichenhall, St. Moritz, Soden, Strathpfeffer, Vals, Woodhall.

**Scurvy.** Acid. Citricum, Acid. Tartaricum, Potass. Citras, Limonis Succus.

**Scybala.** Enemata Olei Lini, Ol. Olivæ and Olei Ricini.

**Sca Sickness.** Amyl Nitris, Caffeinæ Citras, Caffein, Sodio-Salicylas, Camphora, Capsici Tinct., Cerii Oxalas, Chloral, Chlorobrom, Chloroformum, Creosotum, Cocainæ Hydrochloridum, Nitroglycerin, Potass. Bromidum, Sodii Bromidum.

**Scborrhæa Capitis.** Benzin, Ol. Carbolic., Sapo Mollis, Ung. Hydrarg. Ox. Rub., Hyd. Sulph. Flav. Ung.

**Sedatives.**—Section A.

**Sialagogues.**—Section A.

*Sickness, to arrest.*—See *Vomiting*.

*Skin, Abraded.* Collodium.—See *Excoriation*.

*Sleeplessness.*—See *Hypnotics*. Section A.

*Small-pox.* Acid. Carbolic. Glycerinum, Acid Salicylic., Argenti Nitras (*local*), Bismuth Subnit., Chlori Liq., Collodium Flexile, Plumbi Acetas, Potassii Chloras, Quinina.

*Snake Bites.*—See *Bites*.

*Sneezing, Paroxysmal.* Acid. Arsenios., Iodum, Potassii Iodidum.  
*Locally:* Camphor, Menthol, Sodium Chloride.

**Soporifics.**—Section A.

*Sores.*—See *Ulcers*.

*Sores, Bed.*—See *Bed Sores*.

*Sore Nipples.*—See *Nipples, Sore*.

— *Throat.* Acid. Sulphuros. (Spray), Acid. Tannic. (Spray), Armoracia (Inf.), Chlori Liquor (Spray), Cubeba, Gummi Eucalyptus, Mori Syrup., Myrrha, Potass. Nitrás, Potass. Chloras, Rosæ Infusum Acidum.

— — *Malignant.* Acid. Carbolic. Glyc., Argenti Nitrás, Chlori Liquor.

— — *Putrid.* Acid. Carbolic., Potass. Permang., Chlori Liquor, Sodaë Chlorinatae Liquor.

— — *Relaxed.* Alum, Capsicum, Catechu Troch., Gummi Eucalypti Troch., Krameria, Glycerin, Ferri Perchlor., Acid. Tannic. Glycerin., Quercus.

— — *Ulcerated.* Acid. Hydrochlor. Dil., Acid. Sulphuros. (Spray), Argenti Nitrás, Boracis Glycerinum, Hydrarg. Perchlorid.

*Spasmodic Affections.*—See *Antispasmodics*. Section A.

*Spermatorrhœa.* Belladonna, Camphor, Camphora Monobromata, Capsicum, Ferrum Salts, Nux Vomica, Potassii Bromidum, Strychnina.

*Spina Bifida.* Iodo-Glycerin Solution (Morton's) injected.

*Spleen, Enlargement of.* Potassii Bromidum, Potassii Iodidum, Purgatives, Quinina. *Locally:* Ung. Hydrargyri Iodidi Rubri.

*Sprains.* Bellad. Emp., Lin. Saponis, Sp. Vini Rectif. (lotion), Cold Douche, Carbolic Fomentation, Terebinth. Lin. Acet., Opii Linim., Sodii Chloridum (Fomentation).

**Stimulants.**—Section A.

*Stings.*—See *Bites and Stings*.

*Stomach ache.*—See *Gastralgia*.

*Stomach, Irritability of.*—See *Carminatives and Sedatives, Gastric.*

— *Ulceration of.* Argenti Oxid., Argenti Nitrás, Bismuth. Carb., Opium, Peptonised Foods, Potass. Bichromas.

**Stomachics.**—Section A.

*Stomatitis, Ulcerative.* Alum, Borax, Boracis Glycerin., Tinct. Myrrhæ et Boracis, Potass. Chlorat.

*Strangury.* Camphor.

**Styptics.**—Section A.

**Sudorifics.**—Section A.

*Sunstroke.* Apomorphina, Atropina, Phenazonum, Cold Douche, Purgatives, Sinapisms.

*Sweating, Hectic.* Acetum, Acid. Acetic Dil., Acid Camphoric., Acid. Gallic., Acid. Hydroch. Dil., Acid. Sulph. Dil.—See also *Anhidrotics*, Section A, and *Perspiration*, Section B.

*Syncope.* Æther, Ammon. Spir. Arom., Spiritus Vini Gallici.

*Synovitis, Chronic.* Blisters, Emp. Ammon. c. Hydrarg., Hydrarg. Oleas, Ung. Iodi or Tinct. Iodi. (inject.).

*Syphilis. Primary and early secondary:* Auri Chloridum, Barium Chloride, Hydrargyrum and its Compounds, Rubidium Iodide, Stillingia and Fluid Extract.

— *Late Secondary and Tertiary:* Auri et Sodii Chloridum, Iodipin, Iodium and the Iodides, Hydrarg. Carbolas, Hydrarg. Sozoiodolas, Morrhuae Oleum, Quinine Iodo-hydriodide, Sarsaparilla. *Mineral Waters:* Aix-la-Chapelle, Kreuznach, Vals, Woodhall.

*Syphilitic Nodes.* Emplastrum Hydrargyri, Potassii Iodidum, Sodii Iodidum.

— *Warts.*—See *Warts, Syphilitic*.

— *Ulcers.* Hydrarg. Nit. Liquor Acidus, Iodoformum, Iodi Causticum, Ung. Amyli Iodidi, Hydrarg. Flava or Nigra Lotio, Hydrarg. Perchlor. Lotio.

*Tabes Mesenterica.* Hydrarg. Liniment. and Oleas, Iodoformum, Morrhuae Oleum, Ferrum preparations of, Quinina.

*Tape Worm.*—See *Anthelmintics*. Section A.

*Teeth, Caries of.* Acid. Carbolic., Arsenical Paste, Cocaina, Chloral cum Camphora et Cocaina, Creosotum, Mastic Dentaire.

*Tetanus.* Amyl Nitris, Atropina, Cannabis Indica, Chloral Hydras, Curara, Physostigma.

*Thirst, to allay.* Acid. Citricum, Acid. Phosphoricum Dil., Acid. Sulph. Aromat., Acid. Tartaricum.

*Throat, Sore.*—See *Sore Throat*.

*Thrush.*—See *Aphtha*.

*Tic Douloureux.*—See *Neuralgia*.

*Tinea Capitis.*—See *Ringworm*.

**Tonics.**—Section A.

*Tonsils, Enlarged.* *Internally:* Potassii Iodidum. *Locally:* Acid. Carbol. Glycerin., Iodum cum Glycerino or Tinct. Iodi., Ferri Perchlor. Glycer., Acid. Tannic, Glycerin.

— *Inflamed.* *Internally:* Aconitum, Antim. Tart., Belladonna, Guaiaci Trochiscus, Hydrarg. c. Creta, Sodii Salicylas. *Locally:* Alum, Acid. Carbolic., Cocaina, Potass. Chloras.

— *After Excision of.* Trochiscus Althææ.

*Toothache.* Acid. Carbolic., Acid. Sulphuros. (spray), Cajuputi Oleum, Capsici Tinct. Fortior, Caryophylli Oleum, Chloral cum Camphora et Cocaina, Chloroform. c. Camphora, Creosotum, Exalgin, Gelsemii Tinctura, Menthol, Phenol-Camphor, Pyrethrum, Quininæ Ammoniata Tinctura.

*Trichiniasis.* Glycerin in large doses, Terebinth Ol., Purgatives.

*Tuberculosis.*—See *Phthisis and Scrofula.*

*Typhoid Fever.*—See *Fever, Typhoid.*

*Ulcers.* Acid. Boracic., Argenti Nitras, Bals. Peruv., Bismuth Oxyiodogallate, Calcii Carbon. Præcip., Calcis Chlorinatæ Liq., Creta Præparat., Cupri Sulphas, Orthoform, Plumbi Acetas, Plumbi Carb., Resinæ Emp., Sabina, Zinci Sulphas, Zinci Ung.

— *Cancerous.* Acid. Chromic., Antim. Chlor. Liquor., Potassa Caustica.

— *Foul and Fetid.* Acid. Carbolic., Acid. Chromic., Acid. Salicylic., Acid. Sulphuros., Bismuthi Subiod., Calcis Chlorinatæ Liquor, Carbo Ligni, Chlori Liq., Calx Chlorin., Cinchona, Cupri Subacetas, Eucalypti Ung., Iodoform, Potassa Caustica, Potass. Permanganas, Resorein, Soda Chlorinatæ Liquor, Zinci Chloridum.

— *Indolent.* Acid. Chromic., Alumen Exsic., Argent Nit., Bals. Peruvianum, Benzoini Tinct. Co., Cupri Acetas, C. Subacetas, C. Sulphas, Elemi Ung., Hydrarg. Lin., Hydrarg. Oxid. Rubr. Ung., Ichthyol, Kino, Lotio Rubra, Pepsinum, Sabinæ Ung.

— *Sloughing.* Iodoform.

*Uræmia.* Amyl Nitris, Venesection, Caffeina, Digitalis, Elaterium, Pulv. Jalapæ Co., Jaborandi, Normal Saline Solution (Transfusion), Pilocarpina (hypodermic).

*Urine, Excess of Uric Acid in.*—See *Antilithics*, Section A, also *Gout, Calculi, etc.*

*Urine, Phosphatic.*—See *Antilithics*, Section A, also *Calculi.*

— *Incontinence of.* Acid. Benzoic., Belladonna, Buchu, Cantharis, Chloral, Creosotum, Ergota, Ferri Perchlor., Lycopodii Tinct., Quinina, Strychnina.

— *Putrid.* Acid. Boracic., Acid. Carbolic., Betol, Creosotum, Salol, Uva Ursi.

*Urticaria.* Acid. Hydrocy. Dil., Acid. Salicylic., Balsam. Peruvianum, Ichthyol, Liquor Calcis, Potass. Carb. (Lotio), Ung. Zinci.

*Uterus, Hæmorrhage of.*—See *Hæmorrhage*.

— *Inflammation of.* Acid. Carbolic. Glyc., Argenti Nitrás, Iodoform., Iodum Preps., Iodized Phenol, Zinci Sulphas.

— *to contract.*—See *Ecbolics*. Section A.

*Uvula, Relaxed.* Catechu Troch., Capsicum, Guaiaci Troch., Gummi Eucalyptus, Krameria, Pyrethrum, Rosæ Inf. Acid.

*Varicose Veins.* Tinct. Ferri Perchlor., Hamamelis.

**Vermifuges.**—Section A.

*Vesical Catarrh.*—See *Cystitis*.

**Vesicants.**—Section A.

*Vomiting, to allay.*—See *Antemetics*. Section A.

— *in Pregnancy.* Acid. Carbol., Acid. Hydrocyan. Dil., Chloral, Cerii Oxalas, Calcis Saccharat. Liquor, Cocainæ Hydrochloridum, Creosotum, Gentianæ Inf., Ipecac., Potass. Bromid.

— *Chronic.* Acid. Hydrocyan. Dil., Acid. Sulphurosum, Bismuth Salts, Calcis Liquor, Calcii Chloridum, Cerii Oxalas, Gastric Disinfectants.

*Warts.* Acid. Acetic. Glaciale, Acid. Chromic., Acid. Nitric., Argenti Nitrás, Cupri Oleatis Ung., Sodii Ethylatis Liquor.

— *Syphilitic.* Argenti Nit., Hyd. Iodidi. Rub. Ung., Hyd. Nit. Acid. Liquor.

*Wasp Sting.*—See *Bitcs and Stings of Insects*.

*Wax, Indurated.* Glycerinum, Oleum Amygdalæ, Sodii Bicarb. Sol.

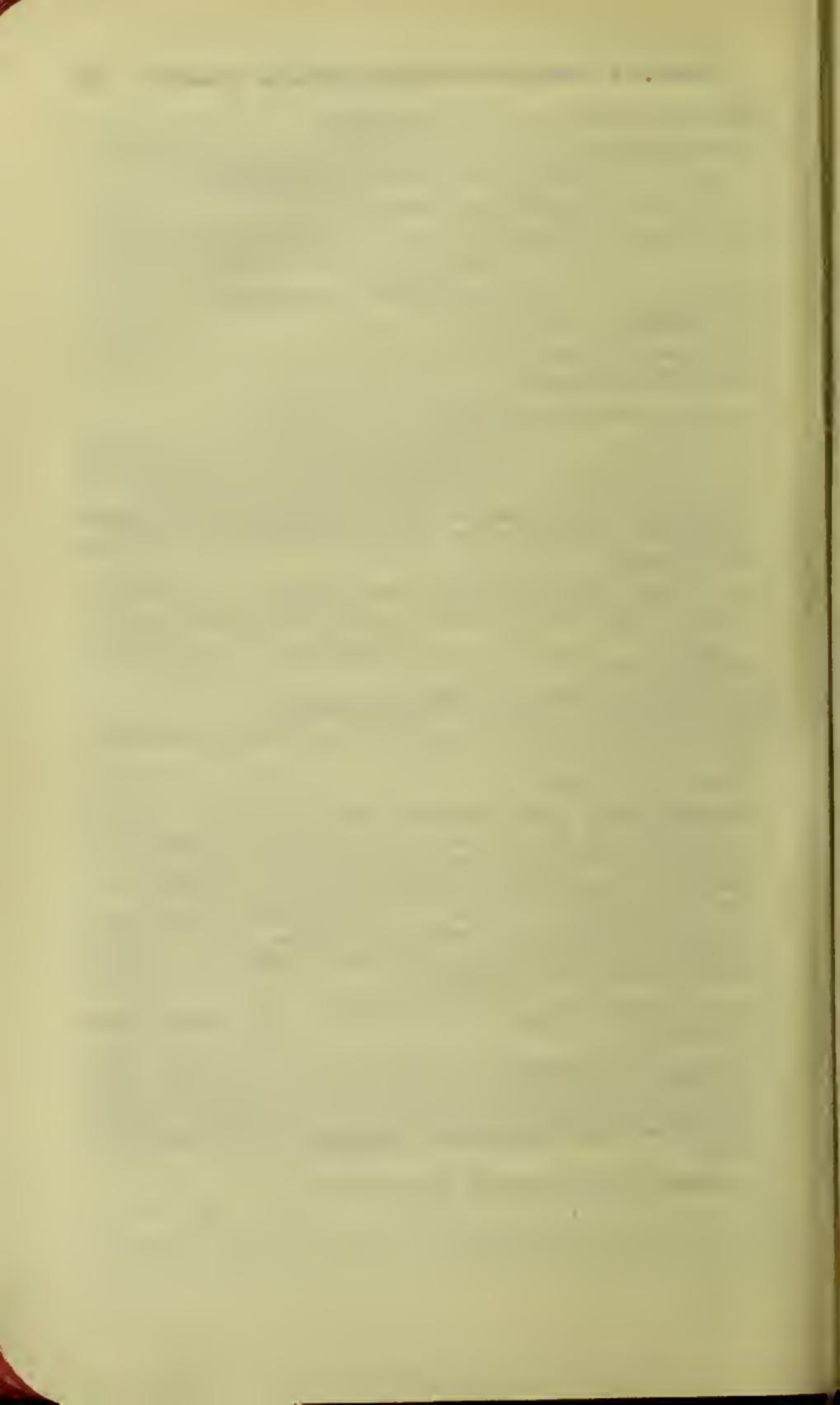
*Whites.*—See *Leucorrhœa*.

*Whooping-Cough.* Acid. Carbolic., Acid. Cresylicum. (inhal.), Acid. Hydrocy. Dil., Alum, Ammon. Bromid., Antipyrine, Antitussin, Atropina, Belladonna, Bromoform, Cannabis Ind., Caryoph. Oleum, Chloral, Tinct. Chloroformi et Morphinæ Co., Conium, Eucalypti Oleum, Euphorbia Pilulif., Euquinine, Grindelia, Hydrogen. Peroxid., Ipecacuanha, Lobelia, Potass. Bromid., Quininae Tannas, Resorcin, Succini Lin., Trifolii Syrupus, Tussol, Zinci Sulphas.

*Worms, Ascarides, Tape, and Round Worms.*—See *Anthelmintics*. Section A.

*Wounds.* Acid. Boracic., Acid. Carbol., Acid. Sulphuros., Acid. Trichloracetic, Aluminii Acetat. Liquor., all Antiseptics (Section A), Arnicae Tinctura, Tinct. Benz. Co., Bismuth. Subnit., Collodium Flexible, Glycerinum, Iodoformum, Iodol, Sal Alem-broth.

— *Poisoned.* Acid. Carbolic., Argenti Nitrás.



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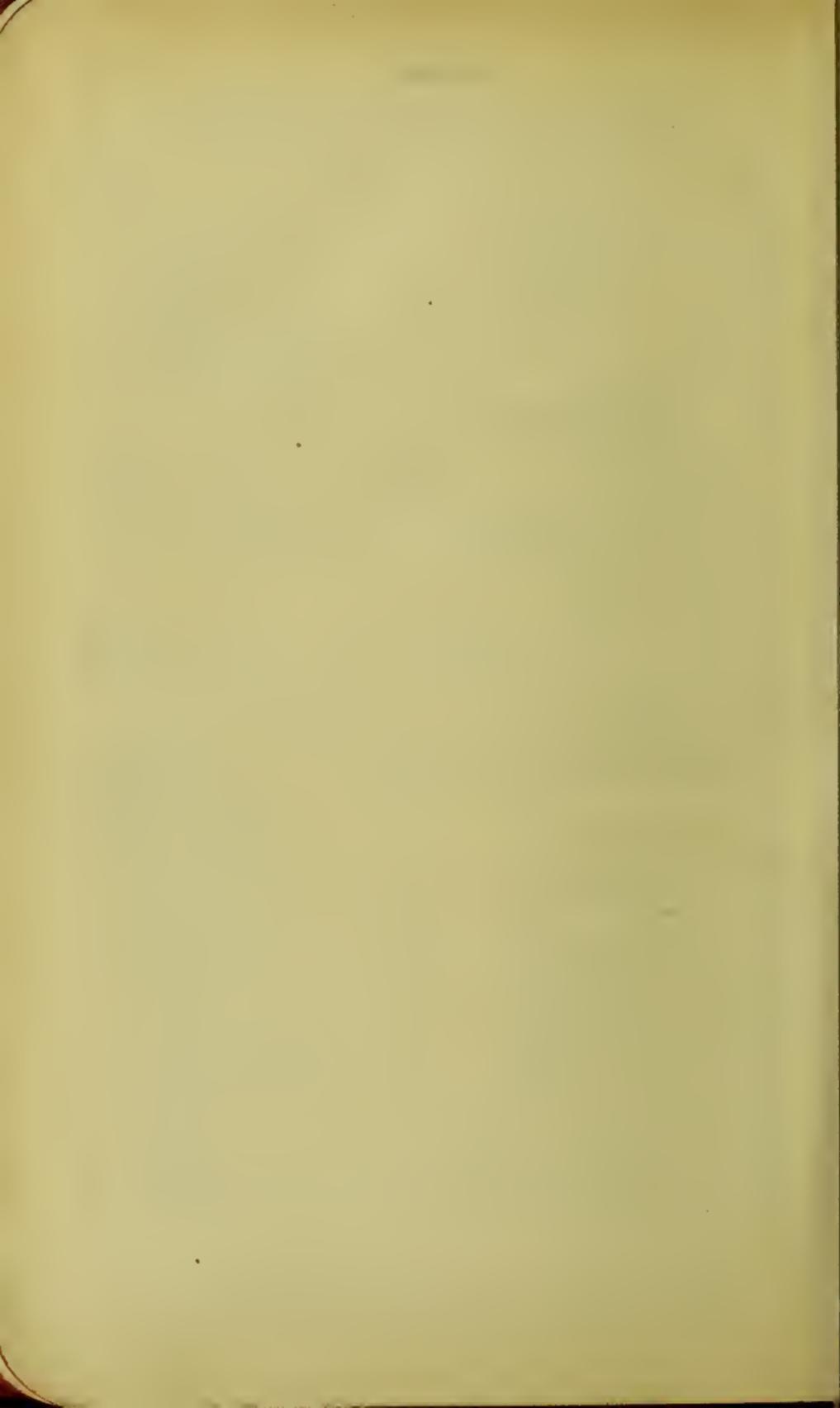
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